

A Companion to Astrology in the Renaissance

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A Companion to Astrology in the Renaissance

Edited by
Brendan Dooley



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PREFACE

“The good will rule over the stars.” Marsilio Ficino’s wishful thought could be an epigraph for this manual, which aims to encompass the wide range of Renaissance astrology, including the theories and practices, the inventions and traditions, the arguments and debates, the hopes and fears. We could also begin by attempting to engage the reader’s goodwill, considering the vastness of the subject and our combined efforts to cover as much as we could. There was a time when readers might expect a book like this to begin with some sort of apology or disclaimer, reminding about the necessity to study important subjects however distant they may be from a “modern” point of view, or warning them to use judiciously the knowledge they may gain. There will be no such appeals here. This is a study of a bygone age, whose extraordinary richness we will endeavor to communicate as best we can. To Renaissance studies as a whole we wish to add a key aspect which has too often been forgotten or neglected.

With the passage of time, the confines of our research seemed to expand, suggesting new areas to explore. The deeper we looked, the more traces we found of a kind of wisdom that is no more, or that has survived in a very different form. Instead of the *petitio benevolentiae* then, we simply present our account of the topic as the fruit of an international collaboration among experts of widely varying backgrounds and areas of interest, each of whom has brought something unique into the conversation. The editor thanks all of them for their patience and hopes the result meets their expectations—as well as the reader’s. He also thanks the people at Brill for their continued faith in the project, especially Julian Deahl who first had the idea, and subject editor Ivo Romein and series editor Christopher Bellitto who saw it through the various stages of production, and an especially perspicacious anonymous reviewer.

Many other debts have accumulated since the first discussions years ago over cups of coffee at an American Historical Association meeting in New Orleans. The editor thanks Paola Zambelli and Germana Ernst for useful suggestions, and the two institutions that have given him generous support in recent years: the School of Humanities and Social Sciences at Jacobs University Bremen and the Graduate School of the College of Arts, Celtic Studies and Social Sciences at University College Cork, whose students, along with all the other readers, young and old, in programs or not, he hopes may find some inspiration here.

We continue to be fascinated by a form of knowledge that enthralled, informed, inspired, consoled, sometimes enraged, generations of humans, supplying essential material for artists, philosophers, creative writers, healers of every type. We will attempt to transmit some of our own enthusiasm along with the results of our curiosity, in the hopes of reviving that forgotten world, as much as we can, in these pages.

INTRODUCTION

Brendan Dooley

The Gutenberg shop in Mainz, Germany, did not only produce Bibles. Surviving in a single fragment, a 1457 broadside attributed to the shop told of “conjunctions and oppositions of the sun and moon, injunctions, elections and days for taking laxatives.”¹ Yet another, dating to around the same time, gave tables of the phases of the moon and movements of the planets for use by astrologers, amateur and professional.² Finally, a short pamphlet, produced while the 42-line Bible was under way and known as the “Türkenkalender,” issued a “Warning to Christendom regarding the Turk,” with thirteen separate appeals, one for each of the thirteen new moons of 1454, addressed to thirteen different potentates, including Pope Nicholas V, the Holy Roman Emperor Frederick III and various dukes, bishops and archbishops, giving the day and time when the new moon would occur in each case, so appropriate action could be taken for a new crusade.³ Some of the first printed sheets in Europe were in one way or another related to astrology.

And no wonder, at a time when ever-present astral influences remained a basic part of the daily lives of people from one end of Europe to the other. If indeed “this inferior world where we live is sustained and governed by the course of the stars,” as the physician and mathematician Jacopo Petramellara insisted in his forecast for 1498, published in Bologna, surely there must be a way to prepare for the worst.⁴ “Whatever adversity the stars may threaten,” he insisted, divine authority might “divert or change for the better”; however, readers should know that in the coming year “not only will many sheep and other domestic animals die, but malignancies, illnesses and sudden deaths will occur in cows, deer and oxen.”

¹ Reproduced in K. Sudhoff, “Laßtafelkunst in Drucken des 15. Jahrhunderts,” *Archiv für Geschichte der Medizin* 1 (1907): 223.

² Karl Anton Schaab, *Die Geschichte der Erfindung der Buchdruckerkunst durch Johann Gensfleisch genannt Gutenberg*, vol. 1 (Mainz: Schaab, 1830), pp. 293–298.

³ Eckehard Simon, *The “Türkenkalender” (1454) Attributed to Gutenberg and the Strasbourg Lunation Tracts* (NY: Medieval Academy of America, 1988).

⁴ *Iudicio de l'anno MCCCCVIII* (Bologna: 1497). Concerning Pietramellara, Giovanni Fantuzzi, *Notizie degli scrittori Bolognesi*, Volume 7 (Bologna: Aquino, 1798), p. 16.

Furthermore, “many places of Christians both in Italy and elsewhere will this year be vexed by the plague or other contagious diseases.” Many people would be afflicted by the French Disease, and far more would die of their diseases than in the previous year. Particularly those living in places ruled by Taurus, Aquarius, Leo and Scorpio would suffer “abscesses of the throat, lesions and agonies”; nor would the great be spared. “Common people as well as lords will suffer numerous infirmities.” Fortunately, on the political front, there was no cause for alarm, he remarked. “Although many barbarous peoples are inclined to disturb and invade Italy, nonetheless there will be little or no war here.”

In the event, any worse calamities were averted at least until the invasion of Louis XII and the resumption of the Italian wars the following year. Pietramellara’s reputation was safe, and he avoided the fate of the rabble-rousing religious prophet Savonarola burned at the stake on the urging of suspicious Florentines for presuming to communicate a much more baleful message based not on astrological study but on divine inspiration. He lived to prophesize another day, and in 1510 he was back in print with dire warnings about “discord and homicides” that might result from the opposition of Mars and Saturn in the sign of Scorpio on the day before the vernal equinox, adding that this configuration was “inimical to females and especially virgins and pregnant women, many of whom will miscarry or lose their virginity.”⁵ To plan for the future, readers ought to keep in mind that the shadow of the last Great Conjunction of Saturn and Jupiter in the sign of Cancer, which occurred in the year 1504, still lay over the heavens.

Of course, astrology meant different things to different audiences. While physicians ordered cures for the star-based cycles of disease and the learned debated the significance of the stars for human life, morally as well as physiologically, popular tales and poems told of the best times to reap and to sow (“The fifth of the moon if you enquire, Will give you the weather for the month entire”), or the best times to conceive, according to planetary rhythms (“beware of an eclipse”).⁶ Preachers and theologians

⁵ *Pronostico de maestro Jacobo Pietramellara secondo la dispositione delle stelle sopra l'anno 1511* (Bologna: 1510).

⁶ “Son enfant ne pouvait vivre, qu’il était né pendant l’éclipse,” quoted in Paul Sébillot, *Le Folk-lore de France*, vol. 1: *Le ciel et la terre* (Paris: 1904), p. 43; “Au cinq de la Lune on verra, Quel temps tout le mois donnera,” from *Calendrier des bons Labourers* (1618), cited in Le Roux de Lincy, *Le livre des proverbes français: précédé de recherches historiques sur les proverbes français et leur emploi dans la littérature du moyen âge et de la renaissance*, vol. 1 (Paris: 1859), p. 107.

cautioned, and popes decreed, against placing more store by stellar conjunctions than by divine providence: mostly in vain. Whether reviled or revered, Renaissance astrology could not be ignored.

This book attempts to sort out the subtleties of the practice, the knowledge and the “lore” across Renaissance cultures, societies, times and places. We are encouraged in this difficult task by the astrologers themselves, who recognized a distinction between the popular street corner variety and its learned counterpart. Both had deep roots: popular astrology flowed along with many other medieval traditions tied to the worlds of planting and curing; learned astrology, inside and outside the universities, drew upon Ptolemy’s *Tetrabiblos*, Abouhali’s *Book of Births*, translated into Latin in the 12th century by Plato of Tivoli, or Albumasar’s *Introductorium*, translated in the same century, as well as other works such as Guido Bonatti’s compendium of celestial knowledge (*Liber Astronomiae*).⁷ Somewhere in between, arguably, and constituting among the earliest printed periodical publications in Europe, were the annual numbers of Johannes Stöfler’s widely distributed *Almanach nova* published in Ulm more or less regularly from 1499 to its author’s death in 1531, and many analogous works, in Latin and in the vernaculars.

What joined the various worlds of Renaissance astrology was a common belief in what John D. North has called the “major premise” of astrology, namely, planetary influences.⁸ Giambattista Della Porta spoke for seekers and practitioners alike when he claimed, in 1558, that celestial and earthly phenomena were interconnected in ways that could be discovered for the benefit of human life. “Things here below,” he specified, “serve those above; and those celestial, in turn, from their divine natures, impart to us a certain virtue, bringing about the generation of corruptible things within a regular and continuous order, and their decay.”⁹ He credited the Egyptians with having formulated the most ancient version of the doctrine that “all things” came from “the influence of the stars,” and in spite of the disagreements between the views of Plato, Aristotle and the ancient

⁷ On Bonatti, Cesare Vasoli, “L’astrologo forlivese Guido Bonatti,” in *Atti del convegno internazionale di studi danteschi* (Ravenna: 1973), pp. 239–260.

⁸ John D. North, “Celestial Influence—the Major Premiss of Astrology,” in Paola Zambelli, ed., “*Astrologi hallucinati*,” pp. 45–100.

⁹ *Magiae naturalis sive de miraculis* (Antwerp: 1562), liber 1, cap. 15. Concerning Della Porta, consider L. Balbiani, ‘La ricezione della Magia Naturalis di Giovan Battista Della Porta. Cultura e scienza dall’Italia all’Europa’ in *Bruniana e Campanelliana V* (1999), pp. 277–303; as well as the papers in the 1986 conference, published as *Giovan Battista Della Porta nell’Europa del suo tempo* (Naples: 1990).

Neoplatonists, he found consistent confirmation among the authorities, as well as in the observable phenomena, for the basic proposition that the microcosm and macrocosm were intrinsically related. Renaissance astrology continued to be informed by this proposition, from the earliest applications of humanist thinking to astrological theory and practice, until astrology's decline in the late 17th century and eventual exclusion from the legitimate sciences.

Della Porta offered these views in the course of a discussion of natural magic; for this type, as distinguished from diabolical magic, was (he claimed, articulating a widespread view) nothing other than "a continuous and consummate knowledge of natural things and a perfect philosophy, whereby humans might harness the forces in nature to improve life or create marvelous effects." Astrology was only one of a number of tools for understanding and deploying such forces. Indeed, some of the prescriptions of the text known as the *Centiloquium*, a forgery attributed throughout the Middle Ages to Ptolemy, appear to join astrology to ceremonial magic. Number 5 of the 100 aphorisms suggested (in the 1676 translation by Henry Coley): "He who is skilful may divert many effects of the stars when he knows their natures, and will prepare himself before their event or coming."¹⁰ These were not idle words. Tommaso Campanella would take them seriously to heart, in compiling a regimen of ritual observances, including burning candles and circles on the floor, for fending off the awful effects of Mars and Saturn.¹¹

Avoiding certain actions could be as instrumentally rational as performing them; and the *Centiloquium* also warned, at no. 22, "Whenever the Moon is in a solid sign (that is in Taurus, Leo, Scorpio, Aquarius, but especially in Leo), it is not fitting to put on new garments; for the garments will cause sickness in those that wear them;" and at no. 41, "When thou settest forth upon any journey, beware that the eighth house and lord thereof be not unfortunate." No less than religious practices, astrological ones made perfect sense, in view of the object in view: not salvation, in this case, but a better life, more success or prosperity, less pain. Although neither magic nor astrology constituted "a church" (according to Durkheim's definition), nonetheless, they helped organize belief around whole bodies of axioms and propositions regarding humans' actions in

¹⁰ Henry Coley, *Clavis astrologiae elimata* (London: 1676), chap. 20.

¹¹ *Astrologicorum Libri VII* (Leyden: 1630), bk. 7, now in an edition annotated and commented by Germana Ernst: Tommaso Campanella, *Opuscoli astrologici* (Milan: 2003), pp. 5–58, 63–134.

the world for many centuries.¹² Belief would begin to slip as the rationality came into question.

This book is rather unusual among the treatments of our theme, in that it attempts to cover the gamut of astrological thought and practice within the chronological framework roughly from 1350 through to 1650. We have profited from a wide range of specialized historical work that has been devoted to the topic over the past twenty years. The advent of a broadly-based historiography of culture, sensitive to text and context, has found in this topic an ideal test case for the interpretative power of collaborative methodologies. Previous anthologies have covered some of the same ground piecemeal, as for instance the excellent volume edited by Klaus Bergdolt, Walther Ludwig and Daniel Schäfer, focused on the single theme of prophecy (also of a non-astrological kind);¹³ or the equally useful one edited by Günther Oestmann, H. Darrel Rutkin and Kocku von Stuckrad looking at the whole history of astrology's relation to the public sphere,¹⁴ not to mention, more in a theoretical vein, the work on science by Patrick Curry and Roy Willis.¹⁵ Curry has also supplied a volume dealing with the particular case of England,¹⁶ Eugenio Garin covered Italy, Monica Azzolini Milan.¹⁷ Hervé Drévilion covered France,¹⁸ and Claudia Brosseder, one of our collaborators, covered Germany.¹⁹ We have benefited from studies regarding particular individuals—Cardano, Nostradamus, Gaurico, Kepler, even the duke of Wallenstein's astrologers—as well as more general volumes looking at the whole period from Antiquity to the present day.²⁰ We have drawn from prominent conference panels and

¹² Émile Durkheim, *The Elementary Forms of Religious Life* (London: 1976), pp. 45–46.

¹³ Klaus Bergdolt, Walther Ludwig and Daniel Schäfer, eds., *Zukunftsvoraussagen in der Renaissance* (Wiesbaden: 2005).

¹⁴ Günther Oestmann, H. Darrel Rutkin and Kocku von Stuckrad, eds., *Horoscopes and Public Spheres: Essays on the History of Astrology*, (New York: 2005).

¹⁵ Roy Willis and Patrick Curry, *Astrology Science and Culture: Pulling Down the Moon* (Berg, Oxford 2004).

¹⁶ Patrick Curry, ed., *Astrology, Science, and Society: Historical Essays* (Woodbridge, Suffolk: 1987); Idem, *Prophecy and Power: Astrology in Early Modern England* (Princeton: 1989).

¹⁷ Eugenio Garin, *Astrology in the Renaissance: the Zodiac of Life* (London: 1983), M. Azzolini, *The Duke and the Stars* (Cambridge, MA: 2013).

¹⁸ Hervé Drévilion, *Lire et écrire l'avenir: l'astrologie dans la France du Grand Siècle, 1610–1715* (Paris: 1996).

¹⁹ Claudia Brosseder, *Im Bann der Sterne: Caspar Peucer, Philipp Melanchthon und andere Wittenberger Astrologen* (Berlin: 2004).

²⁰ S. Jim Tester, *A history of Western Astrology* (Woodbridge, Suffolk: 1987); Kocku von Stuckrad, *Geschichte der Astrologie: Von den Anfängen bis zur Gegenwart* (Munich: 2007). In addition here: Pierre Brind'Amour, *Nostradamus astrophile: les astres et l'astrologie dans*

whole conferences, general and particular, such as in St. Louis in 1999,²¹ at the Istituto Nazionale di Studi sul Rinascimento in Florence in 2001,²² at Barnard College in New York in 2012,²³ or at the Warburg Institute in London, on medicine in 2005²⁴ or at Cambridge University, on the body, in 2006.²⁵ The other many works discussing the relation between astrology and its allied disciplines will turn up in our bibliographies and in our notes.

We will excuse ourselves for the moment from delving too deeply into the various definitions of “astrology,” amply covered in all the works so far mentioned, sufficing for present purposes the one included by the educator Thomas Blundeville in *His Exercises* (1594), “It is a Science which by considering the motions, aspects and influences of the starres, doth foresee and prognosticate things to come.”²⁶ Under this concept we also include beliefs that were astrologically-inspired or drew in one way or another upon astrology, even if the specific term utilized happened to be “mathematics,” “geometry,” or, indeed, “astronomy”. We are more urgently concerned here with the problematic definition of our key term “Renaissance.” Periodic concept or intellectual category? Comprehensible exclusively within the context of humanism, or more broadly based? Continuous with medieval culture or fundamentally different, and in which respects? One account marks the end of medievalism at the point where prophecy (aside from the Bible) loses its general adult audience.²⁷ The

la vie et l'oeuvre de Nostradamus (Ottawa: 1993); Angelika Geiger and Friedrich Schiller, *Wallensteins Astrologie: eine kritische Überprüfung der Überlieferung nach dem gegenwärtigen Quellenbestand* (Graz: 1983); Anthony Grafton, *Cardano's Cosmos: The Worlds and Works of a Renaissance Astrologer* (Cambridge, MA: 1999); Gérard Simon, *Kepler, astronome, astrologue* (Paris: 1979); Alberto Granese, ed., *L. Gaurico e il Rinascimento meridionale: atti del Convegno di studi (Montecorvino Rovella, 10–12 aprile 1988)* (Salerno: 1992).

²¹ Gerhild Scholz Williams and Charles D Gunnoe, eds., *Paracelsian Moments: Science, Medicine and Astrology in Early Modern Europe* (Kirksville, Mo.: 2002).

²² Ornella Pompeo Faracovi, ed., *Nella luce degli astri: l'astrologia nella cultura del Rinascimento: Convegno di studi, Firenze, 14–15 dicembre 2001* (Sarzana, La Spezia: 2004).

²³ <http://medren.barnard.edu/annual-conference>

²⁴ Anna Akasoy, Charles Burnett, Ronit Yoeli-Tlalim, eds., *Astro-Medicine: Astrology and Medicine, East and West* (Florence: 2008). We also acknowledge the conference of twenty years before at the Warburg, with the proceedings published by Patrick Curry, *Astrology, Science, and Society: Historical Essays* (Woodbridge, Suffolk: 1987).

²⁵ *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 41 no. 2 (2010), special issue.

²⁶ Quoted in S.K. Heninger, Jr., “Tudor Literature of the Physical Sciences,” *Huntington Library Quarterly*, 32 no. 2 (1969): 119.

²⁷ Marjorie Reeves, *The Influence of Prophecy in the Later Middle Ages: A Study in Joachimism* (Oxford: Oxford University Press, 1969).

very ambivalence has initiated a creative discussion among contributors, the results of which we hope the reader will likewise find illuminating.

Perhaps what distinguished Renaissance astrology from its earlier and later counterparts was as much its intellectual content as its social context. Renaissance astrologers self-consciously studied and referred to the various traditions passed down from previous ages taking care to note which were medieval, which were ancient, which were recent, and if they got it wrong, as in the case of the Hermetic corpus, and pseudo-Ptolemy's *Centiloquium*, a few of their contemporaries were able, as in these two cases (respectively, Isaac Casaubon and Girolamo Cardano), to use the humanist methods of scholarship to set the record straight. Such collegial interest in the texts and traditions of astrology—whether for using, studying, or debunking—was a major feature of the context of Renaissance astrology, which belonged among the common interests of a relatively widespread community of scholars and thinkers working outside as well as inside ecclesiastical establishments, who shared their insights among themselves and whose ideas filtered down piecemeal into the much larger theater a popular knowledge. Just as “Renaissance” begins at different times and in different places (the 14th century Italy, after 1500 in Britain), so also Renaissance astrology can only with difficulty be assigned specific dates. Would the first mark along our Renaissance astrology timeline be Dino del Garbo's commentary on Guido Cavalcanti's poem “Donna mi prega,” citing Haly's commentary on Ptolemy's *Tetrabiblos*, or would it be George of Trebizond's commentary on the *Tetrabiblos*?²⁸ What about Poggio Bracciolini's rediscovery of Manilius's *Astronomicon* in 1417?²⁹ Our contributors offer a variety of answers. We will not predetermine the case here.

Renaissance astrology comprised ways of knowing as well as ways of being; both concern us here. We shall endeavor to reconstruct some of the mental patterns, beginning with the wide-ranging account by Wolfgang Hübner taking the discussion back to the ancient Egyptians. Ages-old divisions of time provided a kind of substratum underneath Christianity's transformations, reminding, in defiance of bishop and priest, not about

²⁸ Nancy G. Siraisi, *Taddeo Alderotti and his Pupils: Two Generations of Italian Medical Learning* (Princeton: Princeton University Press, 1981), pp. 82–86; Jonathan Usher, “Boccaccio, Cavalcanti's Canzone ‘Donna mi prega’ and Dino's Gloss,” *Heliotropia* 2.1 (2004); John Monfasani, *George of Trebizond: A Biography and a Study of his Rhetoric and Logic* (Leiden: Brill, 1976), p. 149.

²⁹ Marcia L. Colish, *The Stoic Tradition from Antiquity to the Early Middle Ages* (Leiden: E.J. Brill, 1985), p. 313.

the connections between the sacraments and the saints' days, but rather about those between the planets and the days of the week or the months of the year.³⁰ Books of Hours syncretized astrological with Christian elements by prescribing the prayer of the moment as well as the particular works associated with the planet ruling a given period; manuals on home economics (studied below by Dieter Blume) elaborated: "Condemned to die or live in sorrow, swear and strain, or trouble borrow, always needy, never free, it's Saturn's children there you see."³¹ Myth, legend and long-standing tradition reminded about the planets' intrusion, welcome or unwelcome, into life's many trials. The planets will have their way, the seeker must beware.

Of course, appreciating Renaissance astrology does not require being a Renaissance astrologer; but an accurate knowledge of practice at the time certainly helps. The contributions by Giuseppe Bezza and Ornella Faracovi cover the basics, from the various house systems and their representations, to the charting of an individual geniture or event. We inform ourselves about the moment in question, with the greatest possible accuracy (also taking into consideration the challenges of time-reckoning in a regime of limited clock-use). We consult the tables of Regiomontanus for the positions of the planets on every day, at every degree of latitude: "Tabula Declinationum," "Tabula Foecunda," "Tabula Coeli Mediationum," "Tabula Differentiarum Ascensionalium," "Tabula Ascensionum Rectarum," "Tabula Ascensionum Obliquorum." We correct the house cusps in minutes of arc by calculating the correct time between the time listings in the table of right ascensions before and after, and the actual time. The logarithmic tables come in handy for the more intricate calculations. We illustrate our results graphically in a square divided according to the different houses, with the Midheaven at the top. We consider the aspects: the planets in conjunction, in opposition, in quartile—i.e., occupying different signs in the same quadruplicity—and whether a planet is moving toward or away from its aspect. All of these matters we take into consideration when developing our interpretation; and the experience

³⁰ Jacques Le Goff, *Pour un autre Moyen Âge: temps, travail et culture en Occident: 18 essais* (Paris: 1977), chap. 1; and also Bernard Ribémont, ed., *Le Temps, sa mesure et sa perception au Moyen Âge* (Caen: 1992).

³¹ Translated by Marianne Hansen in Timothy Husband, ed., *The Medieval Housebook and the Art of Illustration: Northern European Engravers of the Fifteenth Century* (New York: 1999).

accumulated in a lifetime, combined with the experience of centuries, enriches our conclusions.

The demand for advice was served by a constant supply; and if astrology was everywhere in Renaissance life, so were astrologers—or at the very least, so were the products of their hands and minds (as William Eamon illustrates in his chapter). While learned sages offered services to the rich and well-placed, the semi-learned and the casual soothsayer offered services to anyone for a small fee. In between these extremes a host of practitioners made a living by fashioning themselves as givers of advice. The consultation of astrological information was as common among cultivators of the soil as it was among tradesmen in the cities; and with the development of the printing press, an increasing mass of literature fed a growing demand. We will examine how the everyday uses of astrology brought working astrologers together with their clientele.

The doctrine of similarities and the supposed power of analogies within nature drew the stars down to earth wherever connections could be found. Nature placed signatures on things within our reach: the doctrine was confirmed by ancient and current wisdom and confirmed by experience. Obviously mandrake root, resembling the human form, must be a potent cure for infertility. On other remedies, the imprint of the stars (Paracelsus and others insisted), gave added power: *Artemisia absinthia* (wormwood) drew upon Venus and remedied disorders based on that planet, such as nervous headache.³² Thistle and terebinthum drew upon Mars, and regarded disorders from that planet: in the first case, animal bites and all sorts of cancers; in the second case, scabies. The ways of the planets must be taken into account also in administering the medicines. Tinctures for goiter, said the best-selling manual by Girolamo Rosselli, must be taken during a full moon, and continuously for the next forty-five days; otherwise they are ineffective.³³

The most distinct professional category for which astrology remained consistently a prerequisite was, not surprisingly, the physicians. Many features connected the two disciplines. Physicians' diagnoses depended on the interpretation of signs, as did astrologers' advice. Each part of the body, in the summary by Leonard Digges, was thought to depend on a particular constellation: the head and neck on Aries, the neck on Taurus, the arms, hands and shoulders on Gemini, the breast on Cancer, the back

³² *Opera omnia* (Geneva: 1658), vol. 1 p. 228.

³³ *La prima parte de' segreti di donno Alessio* (Pesaro: 1559), p. 26.

on Leo, etc.³⁴ Aries and Sagittarius (continued Digges) were particularly favorable for those with a phlegmatic complexion; Libra and Aquarius for the melancholic; and Cancer, Scorpio and Pisces for the choleric. The doctrine of critical days, i.e., the notion that diseases reached a crisis followed inevitably either by death or by recovery, dating to Antiquity, referred not only to number mysticism (in Hippocrates, regarding the particular day on which a crisis was to occur) but also to astrology.³⁵ Galen's interpretation, in his book on the problem, focused especially on lunar influences.³⁶ Luca Gaurico, unofficial astrologer to Pope Paul III, brought in all the other planets.³⁷

In his chapter, Hiro Hirai shows how profoundly Renaissance astral medicine was marked by Marsilio Ficino's notion of the harmony of macrocosm and microcosm. An example was Jean Fernel, who referred to the *prisca theologia* and Neoplatonism to formulate an interpretation of Galen's pneumatic physiology joining Christian and pagan themes. Antoine Mizauld went even further, exploring the ways in which Plato's world soul related to the rational soul in humans, and how the sun's heat found correspondence in the human body's natural heat. Girolamo Cardano drew on Aristotle as well as Hippocrates for his interpretation of the nature of the soul and its functioning in the world and in the body. Cornelius Gemma, on the other hand, characterized ventures to locate linguistic parallels, on subjects relating to humoral medicine, between Hippocrates and the Bible. Finally, if heavenly essence was the substance of the soul, then a universal medicine might be based on this principle; and Joseph Du Chesne and other Paracelsians explored this prospect.

Similarities and signatures were only some of the more evident signs of how the world worked, and the relation between the macrocosm and the microcosm occupied some of the greatest thinkers of the time. Not by chance, those who thought hardest about astral influences were the most acute in analyzing natural phenomena in general, as Brendan Dooley explains in his chapter. The same methods and traditions applied throughout. The creative dialogue between deeply rooted beliefs about nature on the one hand and critical conclusions on the other character-

³⁴ Leonard Digges, *A Prognostication of Right Good Effect* (London: 1555, read in the 1605 ed.), pp. 19–20.

³⁵ Nancy G. Siraisi, *Medieval and Early Renaissance Medicine: An Introduction to Knowledge and Practice* (Chicago: 1990), chap. 5.

³⁶ Galen, *De diebus decretoriis*, ed. and tr. by Glen M. Cooper (Basingstoke: 2011).

³⁷ Luca Gaurico, *Super diebus decretoriis . . . axiomata* (Rome: 1546).

ized the period as much as these aspects have until relatively recently puzzled many historians.³⁸ Johannes Kepler was only uttering a commonplace among stargazers when he affectionately referred to astrology as the “silly little daughter” of astronomy; whereas he also knew, and said, that the relation could be viewed in the reverse: astronomy as the daughter of astrology. Traditional alchemy was notably cool to astrology; but Paracelsus and others took seriously the otherwise perhaps superficial linking of upper and lower worlds in the alchemical *Decknamen* or planetary references in alchemical language (silver = *luna*, copper = *venus*, iron = *mars*); and Marsilio Ficino linked the vital spirit of the cosmos to the alchemical quintessence.³⁹

In spite of the impeccable humanist credentials, astrology always existed in an uneasy relation with Christianity, as Graziella Federici Ves-covini explains in detail. Not just because of provocative gestures like that of Girolamo Cardano, who studied the horoscope of Jesus Christ and of various founders of religious sects, supposing that religions per se had a horoscope; and not only because of biblical references to “signs in the sun, the moon, and the stars” (Luke 21:25) of obvious astrological significance. More to the point, in spite of the widespread presence of astrology even among religious authorities, some astrological doctrines seemed to run counter to important Christian beliefs. How to account for free will, if the study of nativities was indeed capable of revealing the future of believers? How, indeed, to account for Divine omnipotence, if destiny was inscribed within the limits set by heavenly movements and their meanings? Ranging from the time of Pico through that of Melanchthon and beyond, the debates concerning the compatibility of astrological propositions with the notions of Christianity reached to the very heart of Renaissance and humanist conceptions of the world. Indeed, after the Protestant Reformation differences began to appear, between views held regarding astrology on either side of the confessional divide.

For other reasons, astrology and politics also existed in an uneasy relation, as Steven Vanden Broecke suggests in his chapter. The unfathomable vicissitudes of human affairs seemed to offer great opportunities

³⁸ Somewhat tendentious was the judgment of Alexandre Koyré, measuring “L’apport scientifique de la Renaissance,” in *Études d’histoire de la pensée scientifique* (Paris: 1966), p. 38: “[The Renaissance] is the epoch of the grossest and most profound superstition,” cited by John M. Headley, *Tommaso Campanella and the Transformation of the World* (Princeton: 1997), p. 349.

³⁹ William R. Newman and Anthony Grafton, “Introduction,” in Idem, eds., *Secrets of Nature: Astrology and Alchemy in Early Modern Europe* (Cambridge, Mass.: 2001), pp. 1–37.

for territorial aggrandizement, as well as terrible occasions of loss of life and property, by those possessing great military and political power. No ruler could forget that Fortune was both friend and foe; and attempting to take it by force, as Machiavelli recommended, was never enough. Its wiles must be understood and its whims must be flattered, and astrology was a way. Guglielmo Gonzaga ordered a horoscope-related scheme for the decoration of the so-called Zodiac Room at the ducal palace in Mantua for the same reason that Borso d'Este had ordered the scheme of constellations for the Hall of the Months at Villa Schifanoia in Ferrara. In the redecoration plan for Palazzo Vecchio in Florence, Cosimo I's bedroom was to be placed directly under the room above, dedicated to Jupiter, his ruling planet. Astrologers were regularly recruited to sit at court (such as Nostradamus in Paris) or accompany rulers on campaigns (such as Cornelius Agrippa, also a soldier, at the side of Emperor Maximilian I). Spectacular predictions could earn great prestige, such as those by Nostradamus and Luca Gaurico concerning the death of King Henry II of France in 1559. Of the dangers, no astrologer was unaware. Half a century earlier, Gaurico went to the torture chamber for having predicted Guido Bentivoglio's problems with pope Julius II; and the English mathematician Thomas Harriot (inventor of telescopic astronomy) was thrown in jail in the following century for having cast nativities for the king and crown prince on the eve of the Gunpowder Plot that narrowly missed destroying them both.⁴⁰

How much astrological knowledge to allow and how much to disallow? Rulers, both secular and ecclesiastical, wrestled with the problem; and the learned worried about the consequences. In the Roman Empire of Antiquity, casting horoscopes of the emperors was illegal; and the Emperor Tiberius attempted to outlaw astrology outright. The Parlement of Paris attempted to do the same in the 1490s in regard to the case of Simon de Phares, prefiguring the American city governments in the nineteenth century, and more recently, the Ukraine.⁴¹ Papal reactions culminated in the famous bull "Coeli et Terrae creator Deus" of 5 January 1586 in which Sixtus V inveighed against all who practiced judicial astrology "and any

⁴⁰ Cases mentioned in this paragraph are documented in Mary Ellen Bowden, *The Scientific Revolution in Astrology: The English Reformers, 1558–1686*, PhD thesis, Yale University, 1974, p. 110; Anthony Grafton, *Cardano's Cosmos*, chaps. 2, 6.

⁴¹ Henry Charles Lea, *History of the Inquisition*, vol. 3 (New York: 1887), p. 446. Phares' concern with the fates of astrologers was evidenced in his *Histoire des plus célèbres astrologues*, Paris, Bibl. nat., ms. n° 1357.

other kind of divination.”⁴² When this did not work, in 1631, Urban VIII, in the bull “Inscrutabilis” thundered: “The inscrutable judgment of God the Highest does not suffer that the dusky human intellect, constrained in the prison of the flesh, should arrogate itself to explore, with nefarious curiosity, the arcana hidden in the divine mind.”⁴³ Laws against witchcraft could also be invoked, to the extent that stellar prophesying and magical incantations aimed at the heavens could be among the crafts connected with unorthodox healing.⁴⁴

Astrologers, magicians, palm-readers, card-readers, diviners of all sorts, all found their way out of real life and into literature, and back again, as Eileen Reeves shows in her chapter. Rabelais, as a counterpoint to the serious almanacs he published as a physician and astrologer, ridiculed inept practitioners in his imaginative works, beginning his *Pantagreuilian Prognostication for the Year 1533* famously thus: “Considering the infinite abuses perpetrated because of a heap of prognostications from Louvain made in the shadow of a glass of wine...” Master Alcofribas Nasier, “Architriclin to the Afore-Mentioned Pantagruel,” continued:

Being therefore desirous to satisfy the curiosity of every good companion, I have tumbled over and over all the pantarchs of the heavens, calculated the quadrates of the moon, hooked out whatever all the astrophiles, hyperuephelists, anemophylaxes, uranopetes, ombrophores, and the devil and all of them, have thought, and then having conferred with Empedocles upon the whole, who, by the way desires to be kindly remembered to you, I have here crammed the pith, marrow, and matter of the substance of it into a few chapters. Assuring you that I say nothing of it, but what I think and that I think nothing of it, but what it is, and there is no more to be known in those matters, than what you are going to read. As for any thing that may hereafter be said over and above, it wilt come to pass, per adventure aye, per adventure no.⁴⁵

⁴² *Bullarum, diplomatum et privilegiorum*, vol. 8, ed. Francisco Gaude (Naples: 1883), p. 646.

⁴³ *Bullarum, diplomatum et privilegiorum*, vol. 14, ed. Francisco Gaude (Naples: 1867), p. 211, dated April 1, 1631. On this, Barbara Mahlmann-Bauer, “Die Bulle *contra astrologiam iudiciariam* von Sixtus V: das astrologische Schrifttum protestantischer Autoren und die Astrologiekritik der Jesuiten. Thesen über einen vermuteten Zusammenhang,” in Klaus Bergdolt, Walther Ludwig, Daniel Schäfer, eds., *Zukunftsvoraussagen in der Renaissance*, pp. 143–222.

⁴⁴ Leland L. Estes, “Good Witches, Wise Men, Astrologers and Scientists: William Perkins and the Limits of European Witch-Hunts,” in Ingrid Merkel and Allen G. Debus, eds., *Hermeticism and the Renaissance: Intellectual History and the Occult in Early Modern Europe* (Washington DC: 1988), 154–65.

⁴⁵ *Works*, tr. Du Chat, Motteux, Ozell, et al., vol. 4 (London: 1807), p. 313. On this topic, Dené Scoggins, “Wine and Obscenities: Astrology’s degradation in the Five Books of Rabe-

But Rabelais' satires against pompous ignoramuses were only the most outrageous of a veritable outpouring of literary material related to our topic. Lodovico Ariosto characterized "The Necromancer" in a play dedicated to this subject (1551); although possibly the first fully fleshed-out astrologer was "the astrologer," in the play by the same name written in 1606 by Giambattista Della Porta, once again taking the opportunity to deflect criticism of his own astrological practice by ridiculing the ineptitude of his rivals.⁴⁶ Soothsayers and prophets appeared at key moments in Shakespeare's plays—not only the ones based on ancient history, such as *Julius Caesar* and *Antony and Cleopatra*, but also in plays about English history like *King John* and *Richard III*. Even if the prophets' methods were rarely explained in detail, the abundant associations here and there could indicate an astrological basis.⁴⁷

The visual representation of astrological ideas unleashed remarkable creativity in this period, and discovering the meanings is a transdisciplinary endeavor.⁴⁸ Dürer's iconic image of Saturn's melancholy, bearing the purse and keys indicative of wealth and power but inducing only sadness, harks back to ancient and modern sources culminating in Marsilio Ficino's physiological themes.⁴⁹ In the Palazzo Schifanoia (Ferrara) cycle, revisited here by Dieter Blume, the enigmatic references point to Albusmagar's account of the Perseo-Egyptian planetary decans, and other texts. Learned treatises again informed the depictions of the planets and their children in the Palazzo della Ragione in Padua, including Pietro d'Abano's *Astrolabium Planum* and Michael Scotus's *Liber*. Astrological themes in art could serve to remind viewers about the importance of a particular personage, provide ornamentation to a larger theme, or even function as talismans to ward off astral influences. Focusing a combination of iconographical with stylistic and cultural analyses on the productions leads to a

lais," in Gerhild Scholz Williams and Charles D. Gunnoe, Jr., eds., *Paracelsian Moments: Science, Medicine and Astrology in Early Modern Europe* (Kirkville: Truman State University Press, 2002), pp. 163–86.

⁴⁶ See Eileen Reeves' chapter below.

⁴⁷ Wolfgang Müller, "Die prophetische Rede in Shakespeares Geschichtsdramen," Klaus Bergdolt, Walther Ludwig, Daniel Schäfer, eds., *Zukunftsvoraussagen in der Renaissance* (Wiesbaden: 2005), pp. 349–64.

⁴⁸ Marco Bertozzi and Wolfgang Hübner, *La tirannia degli astri: gli affreschi astrologici di Palazzo Schifanoia* (Leghorn, 1999), p. 84.

⁴⁹ The classic work is R. Klibansky, E. Panofsky, F. Saxl, *Saturn and Melancholy. Studies in the History of Natural Philosophy, Religion, and Art* (London: 1964). Also, Wojciech Balus, "Dürer's 'Melencolia I': Melancholy and the Undecidable," *Artibus et Historiae* 15, No. 30 (1994): 9–21.

better general understanding not only of the Renaissance but of the place of the Renaissance in Western history in general.

European astrology echoed strongly in the New World, as Claudia Brosseder shows in her chapter on Peru. By the Spanish conquerors, it was regarded as superior to the Andean and Inca counterpart belonging to die-hard “idolatrous” traditions. Creole scholars such as Antonio de la Calancha debated about whether it could be applied unmodified to the Southern sky or must be profoundly changed to fit the local context and the local astronomical observations, many of them made by the Jesuits. It was important in medicine and in local healing. When it involved predictions regarding political and personal affairs, Spanish Inquisitors attempted to suppress it, as had been the case in the Europe. Meanwhile, in the 17th and 18th centuries, the Church directed attention away from it and toward authorized intermediaries in the lives of humans: not the planets per se, but Mary and the saints.

Deeply rooted in Western culture, astrology stood at the junction between East and West and at least one interpretation, once again derived from Aby Warburg, has viewed it as a hybrid born of “Athens and Alexandria.”⁵⁰ If this means somehow that it combined the reasoning spirit and the mythological mind, one would have to add that there was as much Alexandria in Athens as vice versa. More concretely, it drew from the Greek tradition of Aristotle as well as the Hellenic tradition of Ptolemy and Arabs such as Al-Kindi, Albategni, Haly Abenragel, Alchabitius, as well as Jewish thinkers like Abraham ibn Ezra. It traveled throughout medieval Europe and halfway around the globe to the New World, brought by sailors and adventurers, Jesuits and theologians. Here and there, it picked up new ideas; but wherever it went it planted the seeds of curiosity, inspired new devotees, excited new polemics. It provided a language transcending geographical boundaries, truly cosmopolitan, built of concepts that fascinated, responses that fit the mood of the moment, the pulse of the age.

Taking the measure of the great richness and variety of our topic and the associated bibliography has been a daunting task. We hope the results will give our readers at least as much pleasure and instruction as the endeavor has given us.

⁵⁰ Such is Eugenio Garin’s interpretation, paraphrasing Aby Warburg. In *Astrology in the Renaissance*, p. xi.

CHAPTER ONE

THE CULTURE OF ASTROLOGY FROM ANCIENT TO RENAISSANCE

Wolfgang Hübner

Born in Babylonia, astrology flourished in Hellenistic Egypt and the Roman Empire, reaching its apogee finally in the European Renaissance.¹ The extent of astrological testimonies is overwhelming, but since the repudiation of the lore in the 18th century the sources still await adequate study.² A few eminent representative figures and some essential details are all that have been covered to date. A truly comprehensive survey would require intense study in the texts, which are mostly in Latin. This contribution attempts only to lay the groundwork.

From Antiquity to the Renaissance

Astrology, as it has been transmitted across the centuries, is an offspring of Hellenism. Within the Roman Empire, the lore culminated in the second century AD.³ Its language, like that of all sciences, remained Greek. The centers of astrology were situated in the eastern region where it came from: Rhodes, chosen as the crossing point of the geographical map constructed by Eratosthenes,⁴ and Alexandria, where Demetrius of Phaleron,

¹ This study is largely based on Wolfgang Hübner, "Astrologie in der Renaissance," in *Zukunfts Voraussagen in der Renaissance*, ed. Klaus Bergdolt and Walther Ludwig assisted by Daniel Schäfer, *Wolfenbütteler Abhandlungen zur Renaissanceforschung* 23 (Wiesbaden: 2005), pp. 241–279. I am largely indebted to Walther Ludwig, "Zukunfts Voraussagen in der Antike, in der frühen Neuzeit und heute," published in the same volume, pp. 9–64, reprinted in: *Supplementa Neolatina* (Hildesheim: 2008), pp. 132–183.

² There is nothing to be found in the otherwise successful book written by Robert R. Bolgar, *The Classical Heritage and its Beneficiaries* (Cambridge: 1977⁵), nor in the short survey of August Buck, *Die Rezeption der Antike in den romanischen Literaturen der Renaissance*, *Grundlagen der Romanistik*, 8 (Berlin: 1976). One should begin with regionally limited studies like that by Steven Vanden Broecke, *The Limits of Influence. Pico, Louvain, and the Crisis of Renaissance Astrology* (Leiden – Boston 2003).

³ See Frederick Henry Cramer, *Astrology in Roman Law and Politics*, *The American Philosophical Society*, 37 (Philadelphia: 1954).

⁴ Klaus Geus, *Eratosthenes von Kyrene. Studien zur hellenistischen Kultur- und Wissenschaftsgeschichte*, *Münchener Beiträge zur Papyrusforschung und antiken Rechtsgeschichte*, 92 (Munich: 2002), p. 275.

under Ptolemy I, had founded the famous library in the Peripatetic spirit. In the East, the route of transmission was divided: First, the lore went further eastwards across Sassanid Persia (227–651) to India, where it formed a special discipline, that also influenced the extremely rich Arabic literature together with the Hellenistic tradition from the 8th century onwards.⁵ Another branch remained within Greek culture and led directly to the Byzantine Renaissance in the 12th century.

While the astrological tradition was never interrupted in the East, it was broken in the West. The Roman Emperors either condemned its practitioners or expelled them,⁶ then it was strictly forbidden by the Christians despite some attempts by the Valentinians and the Pricillianists to take it over,⁷ and Zeno Veronensis Christianized the entire zodiac in a Neoplatonic spirit in a baptismal speech.⁸ In the Middle Ages, some other attempts were undertaken to adapt astrology to the Christian lore by the already well established method of typology: as the Old Testament was legitimated as a *figura* of the New Testament, now both were related to the pagan zodiac.⁹

But judicial astrology did not survive. One had to wait for the 12th century, when interest in sciences awoke anew, so that astrology re-entered the Western world this time in the Arabic form and fused with Aristotelianism, either via Sicily and the court of Frederic II or via Toledo in Spain.¹⁰

⁵ See David Pingree, "From Alexandria to Baghdād to Byzantium. The Transmission of Astrology," *International Journal of the Classical Tradition* 8 (2001): 3–37.

⁶ Frederick Henry Cramer, "Expulsion of Astrologers from Ancient Rome," *Classica et Mediaevalia* 12 (1951): 9–50; and Cramer, *Astrology in Roman Law and Politics*, pp. 233–248.

⁷ See Wolfgang Hübner, *Zodiacus Christianus. Jüdisch-christliche Adaptationen des Tierkreises von der Antike bis zur Gegenwart*, Beiträge zur Klassischen Philologie, 144 (Königstein: 1983), pp. 17–21 (Pricillianists) and pp. 37–39 (Valentinians).

⁸ Wolfgang Hübner, "Das Horoskop der Christen (Zeno 1,38 L.)," *Vigiliae Christianae* 29 (1975): 120–137. This sermon was versified in the 9th century by Ps. Hirenicius (= Pacificus) of Verona: Id. (as n. 7), pp. 11 and 63f.

⁹ Hübner, *Zodiacus Christianus*, pp. 69–85; Valerie I.J. Flint, *The Rise of Magic in Early Medieval Europe* (Princeton: 1991, repr. Oxford: 1992, 1998), pp. 128–46.

¹⁰ See for instance Paul Renucci, *L'aventure de l'Humanisme Européen au Moyen-Âge (Ve–XIV^e siècle)* (Clermont-Ferrand: 1953), pp. 63–81. Charles Burnett, "Michael Scott and the Transmission of Scientific Culture from Toledo to Bologna," in *Le scienze alla corte di Federico II* (= *Micrologus*, II) (Turnhout: 1994), pp. 101–126; Paul Kunitzsch, *Von Alexandria über Bagdad nach Toledo. Ein Kapitel aus der Geschichte der Astronomie* (Sitzungsberichte der Bayerischen Akademie der Wissenschaften, philosophisch-historische Klasse 1991/1) (Munich: 1991).

A third wave invaded the West some 200 years later in the 14th century together with Byzantine Platonism. In 1348, Georgios Gemistos (later known as Plethon) came to Italy in order to participate, together with Demetrios Palaiologos, in the council held at Ferrara and Florence, where he took part in the foundation of the Platonic Academy. A hundred years later, several other scholars expelled by the Turks followed. Among the books of Cardinal Bessarion, conserved in the Venetian Biblioteca Marciana, there are many astrological manuscripts.¹¹

The Rediscovery of Astrological Literature

For untold ages, humans knew the sky (as far as this was visible) better than the earth. The rediscovery of the fundamental works of Ptolemy (for example, of the *Geographia* in the early 15th century) contributed, along with the shipboard discoveries, to the new view of the οἰκουμένη, which had been under way since the time of Petrarch.¹² His astrological and astronomical works, however, were long known in Latin translation. The *Tetrabiblos* was the first of Ptolemy's works to be printed; it came out in Latin, together with the pseudo-epigraphic Καρπός (*Fructus, Centiloquium*),¹³ regarded at the time as authentic, although probably dating only to the early 10th century.¹⁴ This work circulated in more than 150 manuscripts, and we know no less than six Latin translations in the 12th century alone. In 1477–1491, Lorenzo Bonincontri composed a *Tractatus* on the *Tetrabiblos*,¹⁵ which was also paraphrased or commented by

¹¹ See *Catalogus codicum astrologorum* II, ed. Alessandro Olivieri and Wilhem Kroll (Brussels: 1900).

¹² See Marc Föcking: "Stranio clima. Petrarca e l'amore per la geografia (RVF 135)," *Quaderni Petrarqueschi* 14 (2004): 15–48.

¹³ *Liber quadripartitus. Ptolemaei in IV. tractatus distinctus: [...], Ptolemaei centiloquium [...]*, (Venice: 1493).

¹⁴ Richard Lemay, "Origin and Success of the *Kitāb al-Thamara* of Abū Ja'far Achmad ibn Yussuf ibn Ibrahim, from the Tenth to the Seventh Century in the World of Islam and the Latin West," in *Proceedings of the first International Symposium for the History of Arabic Science, Aleppo 5–12 April 1976*, ed. A.Y. Al-Hassan, G. Karmi, N. Namnum, vol. II (1978), pp. 91–107. Already Cardano was right in recognizing that it is spurious: Anthony Grafton, *Cardano's Cosmos. The Worlds and Works of a Renaissance Astrologer* (Cambridge, MA: 1999), p. 257.

¹⁵ See Benedetto Soldati, *La poesia astrologica nel Quattrocento* (Florence: 1906, reprinted 1986), pp. 135–144.

Giorgio Valla,¹⁶ Girolamo Cardano¹⁷ and later on by Franciscus Junctinus.¹⁸ The original Greek version was not edited—once again together with the Καρπός—before 1535 by Joachim Camerarius¹⁹ and Philipp Melancthon.²⁰ The Greek paraphrase of Proclus was edited by the same Philipp Melancthon,²¹ the commentary of Porphyry²² and an anonymous Greek commentary by his pupil Hieronymus Wolf,²³ who erroneously attributed this commentary to Proclus as well.²⁴

In Florence, the most important astrological manuscripts were conserved in Desk no. XXVIII in the Library built by Michelangelo.²⁵ The oldest, the very precious Codex 34 dating from the 10th or 11th century, was denominated by Franz Boll, following the model of Hugo Grotius' *Syntagma Arateorum* (1600), as *Syntagma Laurentianum*.²⁶ This corpus

¹⁶ *Preclarissimi viri Georgij Valle Commentationes. In Ptolemei quadripartitum [...] quaestiones [...]* (Venice: 1502).

¹⁷ *Hieronymi Cardani [...] in Cl. Ptolemaei Pelusiensis IIII de Astrorum Iudiciis, aut, ut vulgo vocant, Quadripartitae Constructionis, libros commentaria, quae non solum Astronomis et Astrologis, sed etiam omnibus philosophiae studiosis plurimum adiumenti adferre potuerunt [...]* (Basel: 1554, and Lyons: 1555).

¹⁸ *De divinatione, quae fit per astra, diversum ac discrepans duorum catholicorum sacra Theologiae Doctorum: scilicet Francisci Iunctini ac Ioannis Lensaei [...]*, Cologne: 1580.

¹⁹ Κλαυδίου Πτολεμαίου Πηλουσιέως τετράβιβλος σύνταξις, πρὸς Σύρον ἀδελφόν [...] *Claudii Ptolemaei Pelusiensis libri quatuor compositi Syro fratri [...]*, *Traductio in linguam latinam librorum Ptolemaei duum priorum Joachimi Camerarii [...]* (Nuremberg: 1535): translation of book 1 and 2 followed by extracts of book 3 and 4.

²⁰ *Claudii Ptolemaei de Praedictionibus astronomicis, cui titulum fecerunt Quadripartitum, graece et latine, libri IIII, Philippo Melancthone interprete. Ejusdem Fructus librorum suorum, sive Centum dicta, ex conversione Joviani Pontani [...]*—Κλαυδίου Πτολεμαίου Πηλουσιέως τετράβιβλος σύνταξις, πρὸς Σύρον ἀδελφόν. Τοῦ αὐτοῦ Καρπός, πρὸς τὸν αὐτὸν Σύρον. [...] (Basel: 1553).

²¹ *Procli paraphrasis in quatuor Ptolemaei libros de siderum effectionibus*, ed. Philip Melancthon (Basel: 1554). Later edited by Leone Allacci (Leyden: 1635).

²² Εἰσαγωγή εἰς τὴν ἀποτελεσματικὴν τοῦ Πτολεμαίου, ed. Hieronymus Wolf, (Basel: 1559), pp. 181–204. The new critical edition by Stefan Weinstock and Emilie Boer, in *Catalogus codicum astrologorum Graecorum* Vol. 4 (Brussels: 1940), pp. 187–228.

²³ Εἰς τὴν τετράβιβλον τοῦ Πτολεμαίου ἐξηγητὴς ἀνώνυμος—*Commentarius anonymus in Claudii Ptolemaei quadripartitum*, ed. Hieronymus Wolf, in the same edition (Basel: 1559), pp. 1–180.

²⁴ See Wilhelm and Hans Georg Gundel, *Astrologumena. Die astrologische Literatur in der Antike und ihre Geschichte*, Sudhoffs Archiv, Beiheft 6 (Wiesbaden: 1966) p. 215 with n. 10.

²⁵ See *Catalogus codicum astrologorum Graecorum* vol. I, ed. Alessandro Olivieri et al. (Brussels: 1898).

²⁶ Franz Boll, "Beiträge zur Überlieferungsgeschichte der griechischen Astrologie und Astronomie," *Sitzungsberichte der Münchener Akademie, philosophisch-historische Klasse*, 1 (1899): 77–140, in particular p. 89. Cfr. *Hug^{on}is Grotii Batavi syntagma Arateorum, opus poeticae et astronomiae studiosis utilissimum* (Leyden: 1600), containing Aratus and the three ancient Latin translations with notes.

probably goes back to the 9th century. The manuscript with the didactic poems written by Maximus and Manetho goes back to the 11th century, the manuscript from which the important Codex Vaticanus Graecus 1456 was copied in the 14th century, dated to the 12th century.²⁷

Special attention was paid to the work of the famous Abū Ma'shar (Albumasar, 9th century), whose "Little Introduction" had already been translated into Latin in 1120 by Adelard of Bath,²⁸ as was done with his monumental "Great Introduction" twice: by Johannes Hispalensis in 1133 and by Hermannus de Carinthia (Hermannus Dalmata) in 1140.²⁹ Great interest was also given to his work *De magnis coniunctionibus*, which had also already been translated into Latin in the 12th century.³⁰ His *Flores astrologiae* were already printed in 1488³¹ and his work *De revolutionibus nativitatum*, which had already been translated into Greek in the 10th century,³² was translated into Latin by Hieronymus Wolf in 1559.³³

Among the Latin texts the *Mathesis* of Firmicus Maternus must be mentioned, the only ancient Latin introduction written on astrology that owes its conservation to the fact that its author later converted to Christianity and wrote the *De errore profanarum gentium*. The *Mathesis* was among the books belonging to Petrarch.³⁴ Pico della Mirandola pointed out several mistakes, and Pontano used this work as a basis for filling in and versifying the passages missing in the *Astronomica* of Manilius.³⁵ The *Mathesis* was printed as early as in 1499 by Aldus Manutius together

²⁷ Described by Joesph Heeg, *Catalogus codicum astrologorum Graecorum*, vol. 3 (Brussels: 1910), pp. 7–64 and 76–132.

²⁸ The *Abbreviation of the Introduction to Astrology*, together with the medieval Latin translation by Adelard of Bath, ed. and trans. Charles Burnett, Keiji Yamamoto, Michio Yano, *Islamic Philosophy, Theology and Science. Texts and Studies*, 15 (Leyden: 1994).

²⁹ *Introductorium in astronomiam Albumasaris abalachi octo continens libros partiales* [tr. Hermannus Dalmata] (Augsburg: 1489 and Venice: 1506); see now the great parallel edition in nine volumes: Abū Ma'shar, *Liber introductorii maioris ad scientiam judiciorum astrorum*, ed. Richard Lemay (Naples: 1995–1996).

³⁰ Albumasar, *De magnis coniunctionibus* (Augsburg: 1489 and Venice: 1515).

³¹ Albumasar, *Tractatus florum astrologiae* (Augsburg: 1488).

³² Albumasar, *De revolutionibus nativitatum*, ed. David Pingree (Leipzig: 1968). On the dating see p. viii.

³³ Εἰσαγωγή εἰς τὴν ἀποτελεσματικὴν τοῦ Πτολεμαίου, ed. Hieronymus Wolf, pp. 207–279.

³⁴ Remigio Sabbadini, *Le scoperte dei codici latini e greci ne' secoli XIV e XV* (Florence: 1905); Id., *Nuove ricerche col riassunto filologico dei due volumi* (Florence: 1914, reprinted with additions and corrections by Eugenio Garin, Florence: 1967), p. 25.

³⁵ See Wolfgang Hübner, "Firmicus Maternus: Astrologische Werke," in: *Handbuch der Lateinischen Literatur der Antike*, vol. 5: *Restauration und Erneuerung, 284–374 n. Chr.*, ed. Reinhart Herzog (Munich: 1998), p. 88. In general see Michele Rinaldi, "Sic itur ad astra". Giovanni Pontano e la sua opera astrologica nel quadro della tradizione manoscritta della "Mathesis" di Giulio Firmico Materno, *Studi Latini*, 45 (Naples: 2002).

with other texts about the stars (known as the *Aldina*).³⁶ This edition follows the text of Pescennius Niger, who discovered the manuscript “ad extremam Scytharum fecem.”³⁷ The lacunae in the text were supplied by many, among others by the physician Nicolaus Pruckner, who edited it together with other astrological writings for medical interest.³⁸

In his last book, Firmicus partly uses the last book of the *Astronomica* written by Manilius in the late Augustan era. This didactic poem had been rediscovered—at the same time as the poem by Lucretius—in 1517 during the council of Constance by Poggio Bracciolini,³⁹ and it was immediately studied with eagerness not only because of its poetical charm (see below), but also for its astrological lore.

The Success of Astrology in the Renaissance

Before considering astrology in the strict sense, we have to have regard for the progress of science and of new techniques. Hitherto, people had known the concave globe of the sky better than the convex globe of the earth. It is true (but often ignored) that as early as the 5th century BC it was acknowledged as a matter of fact that the earth was a sphere, but actually the known οἰκουμένη covered only a very small part of its surface.

³⁶ The “Aldina” comprises: Julius Firmicus Maternus, *Mathesis* (*De nativitatibus libri VIII*), ed. Franciscus Niger; Marcus Manilius, *Astronomicorum libri V*; Aratus, *Phaenomena*, tr. Germanicus Caesar; Marcus Tullius Cicero, Rufius Festus Avienus, Theon: *Commentaria in Aratum*; Pseudo-Proclus Diadochus [Geminus], *Sphaera*. tr. Thomas Linacre (Venice: 1499). As for Firmicus, note the supplements written by hand in the Guelferbytan edition on books 6 and 7 that Lessing pointed out: Gotthold Ephraim Lessing, *Zur Geschichte der Litteratur. Aus den Schätzen der Herzoglichen Bibliothek zu Wolfenbüttel, Zweyter Beytrag* (Braunschweig: 1773), reprinted in: Gotthold Ephraim Lessing, *Sämmtliche Schriften*, ed. Karl Lachmann and Wendelin von Maltzahn, vol. 9 (Leipzig: 1855), pp. 409–430: “Ergänzungen des Julius Firmicus.”

³⁷ Constantinople is meant here.

³⁸ *Iulii Materni [...] Astronomicon lib. VIII per Nicolaum Prucknerum astrologum nuper ab innumeris mendis vindicati [...]* (Basel: 1533, 1551²). For the supplements see Wolfgang Hübner, *Die Eigenschaften der Tierkreiszeichen in der Antike. Ihre Darstellung und Verwendung unter besonderer Berücksichtigung des Manilius*, Sudhoffs Archiv, Beiheft 22 (Wiesbaden: 1982), pp. 430–438; in general Paul Gerhard Schmidt, *Supplemente lateinischer Prosa in der Neuzeit. Rekonstruktionen zu lateinischen Autoren von der Renaissance bis zur Aufklärung*, Hypomnemata, 5 (Göttingen: 1964).

³⁹ See Hübner, “Astrologie in der Renaissance,” pp. 44f. Id., *Manilius*, in *Die Rezeption der antiken Literatur. Kulturhistorisches Werklexikon*, ed. Christine Walde, Der Neue Pauly, Supplemente 7 (Tübingen: 2010), pp. 510–522; Anna Maranini, *Filologia fantastica. Manilio e i suoi “Astronomica”* (Bologna: 1994). For bibliography see Maria Grazia Bajoni, “Manilio 1950–1999,” *Lustrum* 41 (1999): 105–196, in particular 115–123: “VI: La trasmissione umanistica.”

So there were celestial globes and armillary spheres in Antiquity,⁴⁰ but no terrestrial ones. The first known modern terrestrial globe was manufactured by Martin Behaim in 1493, whereas the most important modern celestial globe was made by Johannes Stoeffler in 1492. Many libraries then were decorated with a pair of globes, one celestial and one terrestrial. This tradition culminated in the famous pair of globes that the Venetian Vincenzo Coronelli made for Louis XIV, 384 cm in diameter (1681–1683), the celestial one positioned at the birth-time of the Sun King, the fifth of September in 1638.⁴¹

As in Antiquity, knowledge of the stars was extremely important for navigation. The main instruments of astronomical observation were the sextant and the universal astrolabe. The latter had been unknown to western culture until the beginning of the 12th century.⁴² Its most famous description, given by Johannes Stoeffler,⁴³ was printed in no fewer than 16 editions between 1513 and 1620. The connection of celestial and terrestrial cartography is shown by the fact that Gerardus Mercator (Gerhard Kremer) entitled the collection of his geographical maps *Atlas*, according to the mythical carrier of heaven.⁴⁴ This fashion of metonymical book-titling was in vogue at that time and in this tradition persists up until the present.

⁴⁰ See Alois Schlachter, *Der Globus. Seine Entstehung und Verwendung in der Antike*, ed. Friedrich Gisinger, Stoicheia. 8 (Leipzig – Berlin: 1927); Ernst Künzl, "Ein römischer Himmelsglobus der mittleren Kaiserzeit. Studien zur römischen Astralikonographie, mit Beiträgen von Maiken Fecht und Susanne Greiff," *Jahrbuch des römisch-germanischen Zentralmuseums Mainz* 47 (2000): 495–594.

⁴¹ Paul Kunitzsch, "Coronelli's Great Celestial Globe made for Louis XIV: the Nomenclature," *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* 14 (2001): 39–55.

⁴² See for example Otto Neugebauer, "The early History of the Astrolabe," *Isis* 40 (1949): 240–256; Paul Kunitzsch, "Das Astrolab," in *Europäische Technik im Mittelalter*, ed. Uta Lindgren (Berlin: 1996), pp. 399–404.

⁴³ *Elucidatio fabricae ususque astrolabii a Ioanne Stoflerino Iustingensi viro Germanico [...]* (Oppenheim: 1513). There are also two French translations, Paris 1556 and 1560, see Günther Oestmann, "Das Astrolabium—ein universelles Mess- und Recheninstrument," in *Melanchthons Astrologie. Der Weg der Sternenwissenschaft zur Zeit von Humanismus und Reformation. Katalog zur Ausstellung vom 15. September bis 15. Dezember 1997 im Reformationsgeschichtlichen Museum der Lutherhalle Wittenberg*, ed. Jürgen G.H. Hoppmann (Wittenberg: 1997), pp. 16–17.

⁴⁴ Gerardus Mercator, *Atlas sive cosmographicae meditationes de fabrica mundi figura. Atlantis pars altera. Geographia nova totius mundi* (Düsseldorf and Duisburg: 1595), often reprinted. For the preceding first mapping work had been chosen another title: Abraham Ortelius, *Theatrum orbis terrarum* (Nuremberg: 1572, reprinted Darmstadt: 2007). On the contrary, the marine equivalent of the metonymical title did not persist: *Le Neptune François ou Atlas Nouveau des cartes marines*, ed. Alexis Hubert Jaillot, Petrus Mortier (Paris 1693–1700).

Astrology in the strict sense benefitted from another technical progress: the printing press. Among the earliest printed books there are many astrological and astronomical works. The *Compilatio de astrorum scientia*, written in the 14th century by Leopold of Austria, was printed for the first time as early as 1489.⁴⁵ Up-to-date almanacs, collections of ephemerides like those published by Stoeffler or Regiomontanus, “vaticinia” (predictions for certain years), were regularly published, people cast birth horoscopes, or collected the nativities of famous personalities, historical or contemporary, such as the collections by Cardano,⁴⁶ Luca Gaurico,⁴⁷ Heinrich Rantzau,⁴⁸ or Johannes Garcaeus.⁴⁹ The studies of Lucas Holstenius and Vincenzo Renieri dealt with the horoscope of Proclus,⁵⁰ those of Johannes Kepler with the *Augusti nativitas*, comparing it also with the

⁴⁵ *Compilatio Leupoldi ducatus Austriae filii de astrorum scientia: Decem continens tractatus*, (<Augsburg:> 1489, then Venice: 1520).

⁴⁶ Girolamo Cardano, *Libellus qui dicitur Supplementum almanach. Libellus alius de restitutione temporum et motuum coelestium, principum geniture cum expositione, quinque eruditorum virorum cum expositione* (Milan: 1538), the first printed collection with ten nativities: five of scholars and five of rulers. Id., *Libelli duo: [...], item geniturae LXVII insignes casibus et fortuna, cum expositione* (Nuremberg: 1544) had 67 nativities. Id., *Libelli quinque* (Nuremberg: 1547) included 100 nativities. Id., *De exemplis centum geniturarum, and Liber XII. geniturarum*, in: *Opera* (Lyons: 1663), vol. 5 gave 120 horoscopes including his own. See Grafton, *Cardano's Cosmos*, pp. 133–170, and especially Id., “Geniture collections. Origins and Uses of a Genre,” in *Books and the Sciences in History*, ed. Marina Frasca-Spada and Nick Jardine (Cambridge: 2000), pp. 49–68.

⁴⁷ *Tractatus Astrologiae Iudiciariae de nativitatibus virorum & mulierum compositus per D. Lucam Gauricum Neapolitanum [...]* (Nuremberg: 1540). Id., *Tractatus astrologicus in quo agitur de praeteritis multorum hominum accidentibus per proprias eorum genituras ad unguem examinatis* (Venice: 1552) (160 nativities). He was followed by Carion and De Schepers.

⁴⁸ Henricus Ranzovius, *Catalogus imperatorum, regum ac principum, qui artem astrologicam amarunt, ornarunt et exercuerunt* (Antwerp: 1580). Idem, [...], *Exempla, quibus astrologicae scientiae certitudo [...]* astruitur: *Imperatorum etiam, Regum, Principum, Illustriumque virorum, qui artem Astrologicam amarunt, atque excoluerunt, testimoniis comprobatur [...]*, (Cologne: 1585) (87 horoscopes). Id., *Tractatus astrologicus de genethliacorum thematum iudiciis pro singulis nati accidentibus, ex vetustis et optimis quibusque auctoribus [...]* collectus (Frankfurt: 1602). On Rantzau see Günther Oestmann, *Heinrich Rantzau und die Astrologie. Ein Beitrag zur Kulturgeschichte des 16. Jahrhunderts* (Braunschweig: 2004).

⁴⁹ Johannes Garcaeus, *Astrologiae Methodus, in qua secundum doctrinam Ptolemaei exactissima facillimaque genituras qualescunque ratio iudicandi traditur [...]* (Basel: 1576): here he explicates 400 nativities. There is also a pair regarding the birth and conception of the daughter of Jadwiga of Poland dating from 16 September 1398, and 22 June 1399. See Ewa Śnieżńska-Stolot, “Horoscopy dziecka Królowej Jadwigi,” *Buletyn Biblioteki Jagiellońskiej* 53 (2003): 5–32.

⁵⁰ On this see the appendix to Henri Dominique Saffrey and Alain-Philippe Segonds, *Marinus: Proclus ou sur le bonheur* (Paris: 2001), pp. 185–201, “L’horoscope de Proclus.”

horoscope of Nero.⁵¹ The same interest was given to the speculative foundation-horoscopes of towns according to the ancient γένος καθολικός.⁵² People divulged their own nativities or those of their children discussing them with their learned friends. The libraries still preserve horoscope-collections containing the typical blank squares where one could easily enter other planetary data.⁵³

Katarchic horoscopy was also practiced,⁵⁴ that is, people chose the most opportune moment for private actions and even more for public ones according to the position of the stars, such as for example the date for the foundation of the University of Wittenberg.⁵⁵ There is even a horoscope engraved in a stone for the new tower of the Benedictine abbey of Niederaltaich on the Danube dating from 24th July 1514.⁵⁶ Chairs for astrology were installed at the universities of Bologna, Ferrara, Padua, Naples, and, abroad from Italy, at Paris and Krakow, although one has

⁵¹ Johannes Kepler, *Augusti nativitas*, in *Opera omnia*, ed. Christian Frisch, vol. 8 (Frankfurt: 1870), pp. 331–335. On Kepler see Edward Rosen, “Kepler’s Attitude Toward Astrology and Mysticism,” in *Occult and Scientific Mentalities in the Renaissance*, ed. Brian Vickers (Cambridge: 1984), pp. 253–272. For the horoscope of Augustus recently Alfred Schmid, *Augustus und die Macht der Sterne. Antike Astrologie und die Etablierung der Monarchie in Rom* (Cologne: 2005). Simonetta Terio, *Der Steinbock als Herrschaftszeichen des Augustus Orbis antiquus*. 42 (Münster: 2006), pp. 134–155.

⁵² Andreas Goldmayer, *Strassburgische Chronica, astrologisch beschrieben* (Straßburg: 1636). Id., *Historische Astronomische und astrologische Beschreibung [...] der Stadt Würtzburg* (Nuremberg: 1645). See Wilhelm Knappich, *Geschichte der Astrologie* (Frankfurt: 1967, 1998³), 286. For this special lore cfr. Rupert Gleadow, *The Origin of the Zodiac* (London: 1968), 67f. Grafton, *Cardano’s Cosmos*, p. 134f.; Dieter Blume, *Regenten des Himmels. Astrologische Bilder in Mittelalter und Renaissance*, Studien aus dem Warburg-Haus, 3 (Berlin: 2000), pp. 88–91 and 129–136. As for Antiquity: Anon., ed. Stefan Weinstock, *Catalogus codicum astrologorum Graecorum* vol. 9 pt. 2 (Brussels: 1953), pp. 176–179 (with bibliography).

⁵³ Ms. Munich clm 27003. Stuttgart Cod. math. 4° 22: written in 1602 for the professor of “Naturphilosophie” teaching at Tübingen, Conrad Haegaeus Cellarius (1577–1636), for instance the cod. math. 4°: 24 horoscopes of six members of the Württemberg family between 1588 and 1643. One may also compare the many written lecture texts between ca. 1500 and 1520: Jürgen Leonhardt, “Exegetische Vorlesungen in Erfurt 1500–1520,” in *Humanismus in Erfurt*, ed. Gerlinde Huber-Rebenich and Walther Ludwig on behalf of the Akademie gemeinnütziger Wissenschaften zu Erfurt (Erfurt: 2002), pp. 91–109.

⁵⁴ On this special method of casting horoscopes see Wolfgang Hübner, *Raum, Zeit und soziales Rollenspiel der vier Kardinalpunkte in der antiken Katarchenhoroskopie*, Beiträge zur Altertumskunde, 194 (Munich: 2003). A special case was the time of conception, see Willy Hartner, “The Mercury Horoscope of Marcantonio Michiel de Venice. A Study in the History of Renaissance Astrology and Astronomy,” *Vistas in Astronomy* 1 (1955): 84–138, reprinted in *Oriens—Occidens*, ed. G. Kerstein et al. (Hildesheim: 1968), pp. 440–495.

⁵⁵ Ms. Munich clm 27003 fol. 13r “prima Academiae Witemberg fundatio” (1520).

⁵⁶ Astrological interpretation by Gerhard Voss OSB, “Der Niederaltaicher Horoskopstein,” in *Melanchthons Astrologie*, pp. 65–67.

to take into consideration that our modern terminological distinction between astronomy and astrology did not yet exist.⁵⁷

Astrological knowledge was integrated into the curriculum of medicine, and often astrology and medicine (“iatromathematics”) were taught by the same professor.⁵⁸ The extremely important system of the four humors,⁵⁹ corresponding to the four elements governed by each, was adapted to the four triplicities that could be inscribed into the zodiacal circle (see Fig. 1.1). Numerous “zodiacal men” following the so-called “melothesia,” showed the practitioner the opportune moment and the right part of the body for blood-letting (see Fig. 1.2).⁶⁰

Based on the Babylonian *practica*, the secret science became anew an instrument of rulership,⁶¹ and so acquired an eminent role in politics. Rulers more or less believed in astrology: examples include Alfonso the Wise in Spain, well known for the “Alfonsine Tables” that astrologers compiled for him, Rudolph II, for whom Kepler composed the “Rudolphine Tables”, as well as kings in France, England, Denmark, and Hungary. A long list of rulers who believed in astrology or at least abetted the astrologers was drawn up by the Danish nobleman Heinrich Rantzau⁶² and to this list of the eminent we must obviously add the popes.⁶³ Paul II confessed to astrology in his public inaugural speech, Sixtus IV and Alexander VI employed astrologers, Julius II chose the day of his accession to the throne according to the position of the stars, Leo X honored the Neapolitan astrologer

⁵⁷ Although recognized by many scholars, this is not yet *communis opinio*. See Wolfgang Hübner, *Die Begriffe “Astrologie” und “Astronomie” in der Antike. Wortgeschichte und Wissenschaftssystematik, mit einer Hypothese zum Terminus “Quadrivium”*, *Abhandlungen der Akademie der Wissenschaften und der Literatur*, Mainz, geistes- und sozialwissenschaftliche Klasse 1989/7 (Wiesbaden: 1989). Cf. Wilhelm Capelle, “Μετέωρος—μετεωρολογία,” *Philologus* NS 25 (1912): 414–448, in particular p. 442: “Das Wort ἀστρολογία ist für die Sternkunde die ursprüngliche und in der ältesten Zeit allein übliche Bezeichnung gewesen.” The far-fetched term ἀστρονομία goes back to Platonism and seems to hint at the double meaning of νόμοι as “law” and “melody” (of the planetary spheres).

⁵⁸ See Giancarlo Zanier, *La medicina astrologica e la sua teoria: Marsilio Ficino e i suoi critici contemporanei* (Rome: 1977). Ptolemy mentions medicine as a referential science of astrology because their methods are similar, for both alike use stochastic prognosis: Ptol. apotel. 1,2,20: ὥσπερ τοῖς ἰατροῖς. Cfr. Grafton, *Cardano’s Cosmos*, p. 64.

⁵⁹ Erich Schöner, *Das Viererschema in der antiken Humoralpathologie*, *Sudhoffs Archiv*, Beiheft 4 (Wiesbaden: 1964).

⁶⁰ Hübner, *Körper und Kosmos. Untersuchungen zur Ikonographie des zodiakalen Melothesie*, *Gratia* 49 (Wiesbaden: 2013); Id., *Die Eigenschaften der Tierkreiszeichen*, pp. 246–259 under no. 7.13 (basic qualities) and 7.24 (humors).

⁶¹ In the Roman Empire casting horoscopes for emperors was forbidden, see Cramer, *Astrology in Roman Law and Politics*, pp. 58 and 235–243.

⁶² See above n. 48.

⁶³ See Knappich, *Geschichte der Astrologie*, p. 204f.

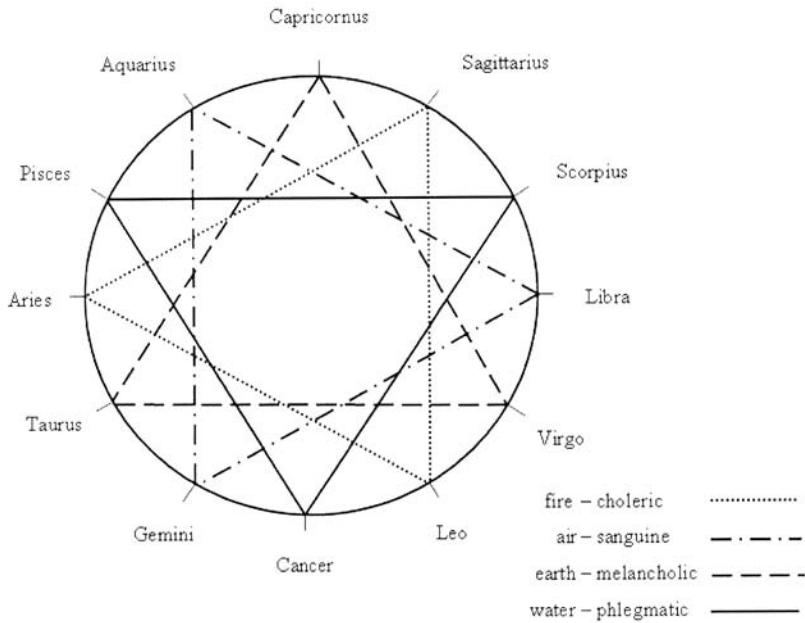


Fig. 1.1: The four humors and elements adapted to the four triplicities of the zodiac

Agostino Nifo and in 1520 established a chair of astrology at the papal university of the Sapienza, Paul III arranged his day's work according to astrological principles and was counseled by the astrologer Luca Gaurico (1476–1558), whom he nominated bishop of Cività Castellana.

So astrology became an instrument of political and religious discussion. It was extremely dangerous to calculate the horoscope of Jesus,⁶⁴ but nevertheless Luca Gaurico was approved by the Church, when he published an astrological treatise on the life and death of Jesus in 1539.⁶⁵ Encouraged by the pope, he manipulated Luther's horoscope.⁶⁶ Various "practices"

⁶⁴ See Ornella Pompeo Faracovi, *Gli oroscopi di Cristo* (Venice: 1999).

⁶⁵ See Knappich, *Geschichte der Astrologie*, p. 229.

⁶⁶ See Aby Warburg, *Heidnisch-antike Weissagung in Wort und Bild zu Luthers Zeiten*, Sitzungsberichte der Heidelberger Akademie der Wissenschaften, philosophisch-historische Klasse. 26 (Heidelberg: 1920), reprinted in: *Gesammelte Schriften*, ed. Gertrud Bing (Leipzig – Berlin: 1932, reprinted Nendeln: 1969), 2: 487–558, and also in: Aby Warburg, *Ausgewählte Schriften*, ed. Dieter Wuttke (Baden – Baden: 1992³), pp. 199–304. Compare recently Reinhart Staats, "Noch einmal: Luthers Geburtsjahr 1484," *Blätter für Pfälzische Kirchengeschichte und Religiöse Volkskunde* 61 (1994), = *Ehrenberg-Hefte* 28 (1994), reprinted in *Melanchthons Astrologie*, pp. 51–53.



Fig. 1.2: Zodiacal man from the *Flores Albumasar*, Erhard Radolt 1488

or “prognostications” influenced political controversies, intensified by numerous pamphlets and their special form, the comet-scripts.

Political astrology was dominated by the special lore of conjunctionalism, which was first established by the Arabian astrologers Al-Kindi, Māša'allāh (Mashallah) and Abū Ma'sar.⁶⁷ About every twenty years a “great conjunction” takes place between the two slowest planets (as known in that time), Saturn und Jupiter, and people observed in particular the quality of the zodiacal sign where the conjunction occurred.⁶⁸ Astrologers believed that the order of conjunctions determined the succession of political rulership as well as of world religions. Christianity for instance was favored by the conjunction of Jupiter and Mercury because the Son of God was identified with the pagan Ἐρμῆς λόγιος. With regard to the zodiac this was supported by his daily “house,” Virgo, identified with Maria.⁶⁹ Thus the great importance attributed in literature and painting to the first decan of Virgo (first third of a sign, in this case Virgo 1°–10°), which Abū Ma'sar describes as a figure of maiden nursing a child whom some call Jesus.⁷⁰

⁶⁷ Abū Ma'sar, *Kitāb-al qirant* = *De magnis coniunctionibus*, see above n. 30. Id., *On Historical Astrology. The Book of Religions and Dynasties (On the Great Conjunctions)*, ed. and transl. by Keiji Yamamoto and Charles Burnett (Leyden: 2000). On conjunctionalism in general see Bartel Leendert van der Waerden, *Die Astronomie der Griechen. Eine Einführung* (Darmstadt 1988), pp. 246–8; John David North, “Astrology and the Fortunes of Churches,” *Centaurus* 24 (1980): 81–211, in particular p. 188f; Godefroid de Callatay, *Annus Platonius. A Study of World Cycles in Greek, Latin and Arabic Sources*, Publications de l'Institut orientaliste de Louvain, 47 (Louvain 1996). Rich material is presented by Ann Geneva, *Astrology and the Seventeenth Century Mind. William Lilly and the Language of the Stars* (Manchester – New York: 1995), pp. 118–140.

⁶⁸ On this Stephan Heilen, “Lorenzo Bonincontris Schlußpropheseiung in *De rebus naturalibus et divinis*,” in *Zukunftsvoraussagen in der Renaissance*, pp. 309–328.

⁶⁹ Abū Ma'sar calculated a “great” conjunction in Virgo for the year 6 BC in *De magnis coniunctionibus*. For the conjunction with Mercury see Jacob Burckhardt, *The Civilization of the Renaissance in Italy*, tr. S.G.C. Middlemore (London: 1904), part VI, chapter 4; Franz Boll, “Vom Weltbild des griechischen Astrologen,” *Süddeutsche Monatshefte* 6/1 (1910): 524–36, repr. in *Kleine Schriften*, ed. Victor Stegeman, Forward by Emilie Boer (Leipzig: 1950), pp. 29–41, in particular, p. 38; Eugenio Garin, *Lo zodiaco della vita. La polemica sull'astrologia dal Trecento al Cinquecento* (Roma – Bari: 1976), in English: *Astrology in the Renaissance: The Zodiac of Life*, translated by Carolyn Jackson and Jane Allen, revised in conjunction with the author by Clare Robertson (London: 1983, once more revised 1990), chap. 1.

⁷⁰ See the *Liber introductorii maioris* mentioned in n. 29, and the bibliography in n. 149. The decan appears in the *Roman de la Rose*: Paul Kunitzsch, *Das Abū Ma'sar-Zitat im Rosenroman*, *Romanische Forschungen* 82 (1970): 102–111; Gisela Hilder, “Abū Ma'shars *Introductorium in astronomiam* und der altfranzösische *Roman de la rose*. Ein Beitrag zur Tradition arabischer Astrologie und ihrer christlichen Deutung im 12. und 13. Jahrhundert,” *Zeitschrift für romanische Philologie* 88 (1972): 12–33. Cf. Ovid, *De vetula* 3,626–633 and the

Conjunctionalism was forbidden in Paris and Oxford in 1277 and was still being combated in the 14th century by the German rector of the Sorbonne, Heinrich von Langenstein, in his writing *Contra astrologos coniunctionistas de eventibus futurorum* (1371). But this did not hinder its enormous persistence. To give some examples: On the 16th of September 1186 almost all planets came together in Libra, and this was interpreted as an ill omen for the conquest of Jerusalem by the Egyptian sultan Saladin in 1187.⁷¹ The great conjunction in Scorpio on the 25th of November of the “annus mirabilis” 1484 was thought to be related both to the outbreak of the Syphilis in Europe and to Martin Luther’s nativity as well,⁷² whereas the conjunction of all three exterior planets in Cancer in the transit from the year 1503 to 1504 was related to the death of pope Alexander VI.⁷³ Six planets joined in Pisces in February 1524. Now, Pisces concludes the zodiac and the triplicity of water (see Fig. 1.1), which is formed only by beings very different from human shape (Crab – Scorpion – Fish), so it has a special affinity to the element of water.⁷⁴ No less than 56 authors in 133 conserved writings predicted, a great flood for that year—but the flood did not come. In May 1583 however, Saturn and Jupiter joined once

paintings of Hermann tom Ring in the original choir in the dome at Münster, see Hermann Eising, “Die Predigt der Sibyllen,” in *Monasterium. Festschrift zum siebenhundertjährigen Weihegedächtnis des Paulus-Domes zu Münster*, ed. Alois Schröer (Münster: 1966), pp. 275–296; Andreas Efinger, Thomas Hibben, Steffen Hunecke, Tobias Schrörs, D.O.M.S., *Lateinische Inschriften im Dom zu Münster, Stiftungen für das Seelenheil, übersetzt, kommentiert, gedeutet* (Münster: 2009), p. 147f. For the combination of the first decanus of the Virgin and the Sibyls see now Laura Ackerman Smoller, “Teste Albumasare cum Sibylla. Astrology and the Sibyls in Medieval Europe,” Lauren Kassel, ed., *Stars, Spirits, Signs. Towards a History of Astrology 100–1800*, special number of *Studies in History and Philosophy of Biological and Biomedical Science* 41/2 (2010): 76–89

⁷¹ See Geneva, *Astrology and the Seventeenth Century Mind*, p. 129; Godefroid de Callataÿ, “La grande conjonction de 1186,” in *Occident et Proche Orient: Contacts scientifiques au temps des croisades. Actes du colloque de Louvain-la Neuve, 24 et 25 mars 1997*, = *Réminiscences*, 5, ed. Isabelle Draelands, Anne Tihon, Baudouin van den Abeele, (Amsterdam: 2001), pp. 369–384.

⁷² Ioan P. Culianu, *Eros et magie à la Renaissance (1484)* (Paris: 1984); English tr.: *Eros and Magic in the Renaissance* (Chicago – London: 1987); Italian: *Eros e magia nel Rinascimento. La congiunzione astrologica del 1484* (Milan: 1987), pp. 265–281; Dieter Wuttke, “Sebastian Brants Syphilis-Flugblatt des Jahres 1496,” appendix IV in *Girolamo Fracastoro, Lehrgedicht über die Syphilis*, ed. and tr. Georg Wöhrle (Wiesbaden: 1993²), pp. 127–142, in particular pp. 133–139.

⁷³ This will be studied in more detail by Stephan Heilen.

⁷⁴ See Hübner, *Die Eigenschaften der Tierkreiszeichen*, pp. 171–179 at no. 3.351. Id., “Manilius als Astrologe und Dichter,” in *Aufstieg und Niedergang der römischen Welt*, ed. Hildegard Temporini and Wolfgang Haase, 2: 32.1 (1984), pp. 126–320, in particular pp. 172–174.

again in Pisces, so once more astrologers announced an accident caused by water for the year 1588, and in this case the prediction was fulfilled actually by the destruction of the Spanish Armada.

Reasons for Success

How was this immense flourishing of astrological lore possible? The foundations had already been recognized as erroneous in Antiquity when, in the middle of the 2nd century BC, Hipparchus had calculated the precession of the equinoxes, which meant that, as the result of the irregular movement of the terrestrial axis (as we know today), the zodiacal signs shift one degree from west to east practically every 72 years. So the twelve constellations no longer correspond to the twelve geometrical sectors counted from the tropical points onwards. Therefore, astrologers pay heed to the abstract twelfths of the ecliptic circle (δωδεκατημόρια) instead of to the real celestial constellations. Nevertheless, their prognostications are still deduced by analogy from the traditional shapes of the zodiacal constellations.

The question of the tenacity of this flourishing is not easily settled, and no single explanation suffices. We will consider several different parameters that contributed more or less to the astonishing persistence of an erroneous belief.

The Necessity of Existential Crisis

In the Renaissance, astrology often served as an existential orientation for life. As in Antiquity, it became a kind of surrogate religion. Permeated with pagan polytheism, the concept of a round and closed universe conveyed in both epochs a sense of security and confidence. The tidy convenience of the "two-Sphere Universe,"⁷⁵ in which the convex terrestrial sphere hangs in a delicate equilibrium amidst the huge concave heavenly sphere, freed the believers from any sentiment of contingency. The eternal and well-constructed harmony of the zodiac with its three regular squares or the four quartiles that articulated the four seasons, and its

⁷⁵ Cp. Thomas S. Kuhn, *The Copernican Revolution. Planetary Astronomy in the Development of Western Thought* (Cambridge, Mass.: 1957).

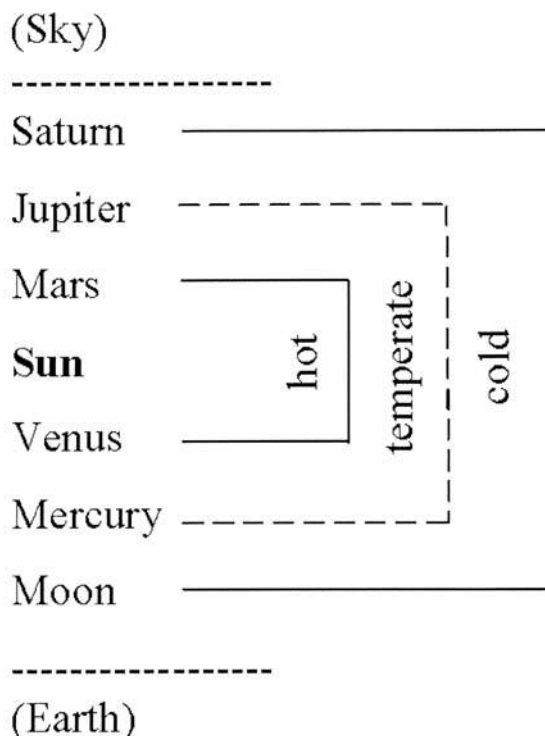


Fig. 1.3: The symmetry of the seven planets

four triplicities of the elements (see Fig. 1.1),⁷⁶ and the even more perfect symmetry of the seven planets with the sun in the middle (see Fig. 1.3)⁷⁷ satisfied the desire for constancy, continuity, and security. On the one hand, people wished to ignore Giordano Bruno's correct theory that the earth by no means occupies the center of the universe, and that the sky, far from being a closed sphere, expands to the infinite.⁷⁸ On the other hand mankind was haunted by various political and social upheavals, terrible wars like the assaults of the Turks, and manifold diseases, especially the

⁷⁶ See A[uguste] Bouché-Leclercq, *L'astrologie grecque* (Paris: 1899, reprinted Brussels: 1963 and Aalen 1979), 158–206. Hübner, *Die Eigenschaften der Tierkreiszeichen*, pp. 74–82 under no. 1.31 and pp. 238–245 under no. 7.11.

⁷⁷ The system is verifiable from the time of Archimedes: Walter Burkert, *Weisheit und Wissenschaft. Studien zu Pythagoras, Philolaos und Platon*, Erlanger Beiträge zur Sprach- und Kunstwissenschaft, 10 (Nuremberg: 1962), p. 297 with n. 121.

⁷⁸ Giovanni Gentile, *Giordano Bruno e il pensiero del rinascimento* (Florence: 1940³), reprinted with introduction by Eugenio Garin (Florence: 1991).

morbus gallicus, or by numerous pestilences in the 14th and 15th centuries.⁷⁹ Thus in 1456, the poet Lorenzo Bonincontri had to lament the death of his wife and all his children except one son, whereas Hieronymus Wolf lost a brother and a sister. Periods of crisis were always a hotbed for astrology, and this may explain in some way the requirement for individual, political and religious prognostication.⁸⁰

Individualism

Jacob Burckhardt's theory⁸¹ that a new kind of individualism arose in the Renaissance has been rejected vehemently and often.⁸² Nevertheless, it has been acknowledged and essentially corroborated by Ernst Cassirer, who studied the rich literature on determinism and free will of that period,⁸³ and August Buck has applied even more diligent consideration to the epoch-making thesis of Burckhardt.⁸⁴ The anthropocentrism of the humanists followed their great ideal Cicero, who employs his own personality not only for his strategic advocacy,⁸⁵ but also frequently in his rhetorical and philosophical writings.⁸⁶ The epistolary works of the Renaissance display a personal mark, while the new literary genre of autobiography strikes new pathways, in works such as Petrarch's *Secretum*, Cardano's

⁷⁹ See Klaus Bergdolt, *Die Pest 1348 in Italien* (Heidelberg: 1989).

⁸⁰ Vanden Broecke, *The Limits of Influence*, p. 269.

⁸¹ Jacob Burckhardt, *Die Cultur der Renaissance in Italien, ein Versuch* (Basel: 1860), second chapter: "Die Entwicklung des Individuums."

⁸² See for instance Horst Rüdiger, *Wesen und Wandlung des Humanismus* (Hamburg: 1937, second ed. Hildesheim: 1966), pp. 226–278.

⁸³ Ernst Cassirer, *Individuum und Kosmos in der Philosophie der Renaissance* (Leipzig – Berlin: 1927, reprinted Darmstadt: 1963 and later).

⁸⁴ August Buck, "Die Auseinandersetzung mit Jacob Burckhardts Renaissancebegriff," in *Respublica Guelpherbytana: Wolfenbütteler Beiträge zur Renaissance- und Barockforschung. Festschrift für Paul Raabe*, ed. August Buck and Martin Bircher (Amsterdam: 1987), pp. 7–34, in particular on individualism pp. 10–12, 24–28 and 33. See also Clemens Zintzen, "Antike und Renaissance," *Mittelalterliches Jahrbuch* 31,2 (1996): 103–129, in particular pp. 126–127.

⁸⁵ See Andreas Thierfelder, "Über den Wert der Bemerkungen zur eigenen Person in Ciceros Prozeßreden," *Gymnasium* 72 (1965): 385–414, reprinted in: *Ciceros literarische Leistung*, ed. Bernhard Kytzler (Darmstadt: 1973), pp. 225–266.

⁸⁶ While Plato never figures in his dialogues, Cicero did not refrain from introducing himself. First he did not follow the recommendation of his friends to integrate his person as speaker into *De republica*, but from the contemporaneously written *De legibus* onwards he appears almost in all dialogues, especially in *Brutus*, see Georg Misch, *Geschichte der Autobiographie* (Leipzig: 1907 – Frankfurt: 1969); vol. 1 *Altertum* (Frankfurt: 1945–50, 3rd ed.), pp. 347–351. Autobiography in the modern sense did not exist in Antiquity.

De vita propria, or the autobiographical notes of Hieronymus Wolf.⁸⁷ In the fine arts, the various manners of self-representation by portraits and sepulchral art correspond to this trend.

Burckhardt⁸⁸ remarked, too, that the highest level of individualism is cosmopolitanism. This idea is valid not only in the mere geographical, but also in the cosmic sense: individuals believed themselves to be at home in the entire universe—although the consequence of the idea was that the microcosmical man, standing, like Atlas, on the fixed earth, and carrying the circulating sphere of the heaven, must experience painful contortion (see Fig. 1.4).⁸⁹

In any case, the personal horoscope became important, and here we find a difference with respect to the practice of ancient astrology. In Babylonia, predictions concerned only the ruler and the particular kingdom governed by him. In the period of Hellenism, interest in individual destiny began to prevail. Almost all personal horoscopes known to us from the Roman period—either from papyri, or serving as examples of astrological handbooks, are anonymous.⁹⁰

It is true that the didactic poet Manetho versified his own horoscope as a sphragis, a sphragis being a personal seal;⁹¹ the biographer Marinus

⁸⁷ Written between 1564 and 1570 and edited by Johann Jacob Reiske, in *Oratores Graeci* (Leipzig: 1773), pp. 772–876, translated by Siegfried Spring, *Nachrichtenblatt der Societas Annensis* (1982–1984), once more by Hans Georg Beck, *Der Vater der deutschen Byzantinistik. Das Leben des Hieronymus Wolf von ihm selbst erzählt* (Munich: 1984) as well as Id., “Hieronymus Wolf,” in *Lebensbilder aus dem Bayerischen Schwaben*, ed. Wolfgang Zorn (Munich: 1966), pp. 69–193. Significantly enough, Reiske leaves out the horoscope (781 n.): “Hic longum locum, astrologiarum et horoscopicarum nugarum plenum omisi, ne tadio lectoribus et derisui essem, neu bonum Wolfium sannis exponerem.” Beck omits even more of the text.

⁸⁸ Burckhardt, *Die Cultur der Renaissance*, II 3 at the end of the chapter. With reference to this John Addington Symonds, *The Renaissance in Italy. The Revival of Learning* (London: 1877, reprinted Hildesheim: 1972) evokes the “double discovery of the world and the discovery of man”; see Buck, “Die Auseinandersetzung mit Jacob Burckhardts Renaissancebegriff,” 15.

⁸⁹ See Fritz Saxl, “Atlas, der Titan, im Dienst der astrologischen Erdkunde,” *Imprimatur* 4 (1933): 44–53.

⁹⁰ A complete repertory of all ancient horoscopes will soon be provided by Stephan Heilen. Compare Wolfgang Hübner, “Privates und öffentliches Horoskop,” *Würzburger Jahrbücher* 35 (2011): 33–59.

⁹¹ Maneth. 6(3), 738–750 = Horosc. I 80, in: Otto Neugebauer – H[enry] B[artlett] Van Hoesen, *Greek Horoscopes*, *Memoirs of the American Philosophical Society*, 48 (Philadelphia: 1959), p. 92.



Fig. 1.4: Francesco di Giorgio: Atlas, Braunschweig, Kupferkabinett

presented that of Proclus;⁹² the astrologers Vettius Valens⁹³ and Hephaestion⁹⁴ used their own horoscopes for teaching; and the orator Aelius Aristides indicates his own in the description of a dream.⁹⁵ But these are exceptions; and indeed, modern research has only recently been able to devise computer programs for assigning the anonymously transmitted data to specific historical persons. In contrast, in the Renaissance anonymity was the exception,⁹⁶ and people self-consciously published their own nativities or those of their children. Melanchthon's father ordered a horoscope for his son and Melanchthon himself ordered them for his two daughters in order to discuss them with their friends.⁹⁷ Several scholars alluded to the position of the stars at the time of their birth, or expressed anger about them. Poets from Dante onwards tried to investigate, as Horace and others had done before them, the remarkable position of Mercury, the patron of astrologers and poets as well, with respect to his two "houses", Gemini and Virgo (see Fig. 1.6).⁹⁸

⁹² Marinus, Πρόκλος ἢ περὶ εὐδαιμονίας 35 = Horosc. L 412 Neugebauer – van Hoesen *Greek Horoscopes*, p. 135f., more exactly calculated by Alexander Jones, "The Horoscope of Proclus," *Classical Philology* 94 (1999): 81–88, see also Saffrey and Segonds, *Marinus, Proclus ou sur le bonheur*.

⁹³ Vettius Valens, *Anthologiae*, ed. David Pingree (Leipzig: 1986), Praefatio p. v. On this and for Hephaestion see Katrin Frommhold, *Bedeutung und Berechnung der Empfängnis in der antiken Astrologie*, Orbis antiquus, 38 (Münster: 2004), pp. 110–114 and 151–162.

⁹⁴ Heph. 2,1,32–34 and 2,2,22–27 and 2,11,6–7 = Horosc. L 380 in Neugebauer—van Hoesen, *Greek Horoscopes*, p. 131f., recognized by David Pingree, in *Hephaestionis Thebani apotelesmaticorum libri tres*, I (Leipzig: 1973), Praefatio p. v, cp. 2,2,23 ἐγὼ ἐτέχθην.

⁹⁵ See ultimately Charles A. Behr, "Studies on the Biography of Aelius Aristides," *Aufstieg und Niedergang der Römischen Welt* II 34.2 (1994): 1140–1233, in particular pp. 1141–1151.

⁹⁶ Two examples are given by Grafton, *Cardano's Cosmos*, p. 158: a (married) prostitute and an effeminate clergyman.

⁹⁷ See Wolf-Dieter Müller-Jahncke, "Philipp Melanchthon und die Astrologie—Theoretisches und Mantisches," in *Melanchthon und die Naturwissenschaften seiner Zeit*, ed. Günter Frank and Stefan Rhein (Sigmaringen: 1998), pp. 123–135.

⁹⁸ See Hübner, *Die Eigenschaften der Tierkreiszeichen*, pp. 543–545 on Manil. 4,158–160; Joseph-Henriette Abry, "Inveniunt et in astra vias... (Manilius, Astr. 4,152–161)," in *Palladio Magistro. Mélanges Jean Soubiran* (Toulouse: 2002), pp. 65–73. For examples from the Renaissance see Hübner, "Trimalchio Mercurialis," in *Des Géants à Dionysos. Mélanges de mythologie et de poésie grecques offerts à Francis Vian*, ed. Domenico Accorinti and Pierre Chuvin (Alessandria: 2003), pp. 75–94; Wolfgang Hartner, *The Mercury Horoscope of Marcantonio Michiel*, referring to the rare conjunction of sun, Jupiter and Mercury in Cancer 2°. To the "viri Mercuriales" in Antiquity Aelius Aristides could be added, see Behr, "Studies on the Biography of Aelius Aristides," p. 115, and for the Renaissance, referring to Alessandro Marcello, see Walther Ludwig, "Zur Biographie und den Epigrammen des Komponisten Alessandro Marcello," *Archiv für Musikwissenschaft* 60 (2003): 171–185 (reprinted in: *Supplementa Neolatina* (Hildesheim: 2008), in particular pp. 179 (= 803) and 183 (= 807).

In contrast to the quickly-moving Mercury, the old and slowly-proceeding Saturn causes melancholy (Capricorn being his day-house); such was a concern for the emperor Frederick III and his son Maximilian I.⁹⁹ Back in the 14th century, the whimsical clergyman Opicinus de Canistris, born on Christmas Eve, related the Greek name of Capricorn, Αἰγόκερως (at that time spelled Ἐγόκερως), in an almost masochistic manner to his own *Ego*.¹⁰⁰ Cardano exhibits his horoscope in his autobiography *De vita propria* with the relentless frankness of a “cœur mis à nu”¹⁰¹ speaking about himself repeatedly, with particular extensiveness within a collection of twelve nativities¹⁰²—being to my knowledge the most detailed description of a horoscope of that time—and he compares it to the much-discussed nativity of Augustus,¹⁰³ gathering other persons born under Capricorn. With extreme pessimism he states that he would almost have been born a monster, if certain planets had not occupied zodiacal signs of human shape.¹⁰⁴ This was his astrological contribution to “humanism.” Hieronymus Wolf deduces the weakness of his left eye from the quartile aspect between Saturn and the Moon, and his deformed face from the opposition between the Moon and Mercury.¹⁰⁵ Following the model of Manetho, the poets Conrad Celtis¹⁰⁶ and

⁹⁹ See Raymond Klibansky – Erwin Panofsky – Fritz Saxl, *Saturn and Melancholy. Studies in the History of Natural Philosophy, Religion and Art* (London: 1964).

¹⁰⁰ See Richard Salomon, *Opicinus de Canistris. Weltbild und Bekenntnisse eines avignonischen Klerikers aus dem 14. Jahrhundert. Mit Beiträgen von Adelheid Heimann und Richard Krautheimer*, Studies of the Warburg Institute, I (London: 1936, reprinted Nendeln: 1969), p. 123f.: *ante Christum* becomes “Antichristus.”

¹⁰¹ Girolamo Cardano, *De vita propria*, in *Opera omnia*, ed. C. Sponius (Lyons: 1663, reprinted Cannstatt: 1966 with introduction by August Buck), vol. I, c. II *Nativitas nostra*. The beginning is: “Tentatis, ut audivi, abortivis medicamentis frustra, ortus sum an. MDVIII...”

¹⁰² Girolamo Cardano, *Liber XII. geniturarum*, in: *Opera*, vol. 5, 517–541: nativity no. VIII.

¹⁰³ Followed by Heinrich Rantzau, *Exempla*, pp. 109–110. On the horoscope of Augustus studied by Scaliger, Kepler and Albert Rubens see Terio, *Der Steinbock als Herrschaftszeichen des Augustus*, pp. 134–155.

¹⁰⁴ Cardano, *De vita propria*, c. 2 “ideò poteram esse monstruosus [...]. cum Sol & maleficae ambae, et Venus & Mercurius essent in signis humanis, ideo non declinavi à forma humana.” On the important difference between animal-shaped and human-shaped zodiacal signs see Hübner, *Die Eigenschaften der Tierkreiszeichen*, pp. 130–136 under no. 3.12 and pp. 489–499.

¹⁰⁵ Wolf, *Oratores Graeci*, p. 796, as well as the translation by Beck in *Der Vater der deutschen Byzantinistik*, p. 9.

¹⁰⁶ Conrad Celtis, *Amores* 1.1. The horoscope of Celtis is included in Munich clm 27003 fol. 33^v.

Petrus Lotichius¹⁰⁷ and the composer-painter Alessandro Marcello¹⁰⁸ form their horoscopes in a poetical sphragis. The banker Agostino Chigi hired Baldassare Peruzzi to paint his personal horoscope on the ceiling of the Villa Farnesina¹⁰⁹ and Cosimo de' Medici ordered that the exact position of the stars at his birth-time be painted on the cupola of his private chapel, with the assistance of Paolo Toscanelli.¹¹⁰ Finally, the philologist Joseph Justus Scaliger published his own horoscope in the first edition of his *Manilius* (1579), which he dedicated to the credulous Henri III (see Fig. 1.5);¹¹¹ but in the second edition (1600) and in the considerably extended posthumous third edition (1655), the figure disappeared.

Universalism

The complement to individualism is universalism. It is no coincidence that the book held by Plato in Raphael's "School of Athens" is the *Timaeus* in which microcosm and macrocosm are interwoven. To this universal world-view corresponds the astrological universalism with its combination of religion and science, penetrating all fields of the world and human life, so the individual being is integrated into the universe.¹¹² The astrolog-

¹⁰⁷ Lotichius, Elegy 2,8 *De natali meo*, see Stefan Faller, "Astronomisches in Lotichius' Elegien 2,8 und 2,13," in *Lotichius und die römische Elegie*, Ulrich Auhagen and Eckard Schäfer, eds., Neolatina, 2 (Tübingen: 2001), pp. 115–135. Walther Ludwig, "Die Epikeden des Lotichius auf Stibar, Micyllos und Melanchthon," *ibid.*, pp. 153–184. After Melanchthon's death, Lotichius versified his horoscope in Elegy 4,479–90. Melanchthon's horoscope is included in Munich clm 27003 fol. 6^r.

¹⁰⁸ See Ludwig, *Zur Biographie und den Epigrammen des Komponisten Alessandro Marcello*.

¹⁰⁹ Has been dated to 1465, see Aby Warburg, "Orientalisierende Astrologie" (1926), in *Gesammelte Schriften*, 2: 559–565, in particular p. 563; Fritz Saxl, *La fede astrologica di Agostino Chigi. Interpretazione dei dipinti di Baldassare Peruzzi nella Sala di Galatea della Farnesina. Reale Accademia d'Italia* (Rome: 1934); Blume, *Regenten des Himmels*, p. 195.

¹¹⁰ Blume, *Regenten des Himmels*, p. 197.

¹¹¹ M. Manilius, *Astronomicôn libri quinque, Josephus Scaliger recensuit, ac pristino ordini suo restituit. Eiusdem J. Scaligeri commentarius in eosdem libros, & castigationum explicationes* (Paris: 1578–1579, reprinted Heidelberg: 1590), p. 143. This horoscope was later reprinted in the *Epistola de vestustate et splendore gentis Scaligeranae et Julii Caesaris Scaligeri vita* (Leiden: 1594). Compare Jacob Bernays, *Joseph Justus Scaliger* (Berlin: 1855, reprinted Osnabrück: 1965), 31; Anthony Grafton, *Joseph Scaliger. A Study in the History of Classical Scholarship*, vol. 1: *Textual Criticism and Exegesis* (Oxford: 1983).

¹¹² See Wolfgang Hübner, "Religion und Wissenschaft in der antiken Astrologie," in *Zwischen Wahn, Glaube und Wissenschaft. Magie, Astrologie, Alchemie und Wissenschaftsgeschichte*, ed. Jean-François Bergier (Zurich: 1988), pp. 9–50. Compare Stefano Benassi, in *L'astrologia e la sua influenza nella filosofia, nella letteratura e nell'arte dall'età classica al rinascimento*, ed. L. Rotondi Secchi Tarugi (Milano: 1992), pp. 134f. "L'astrologia costituiva di fatto un modello complesso di sapere in cui si sommavano aspetti rintracciabili anche

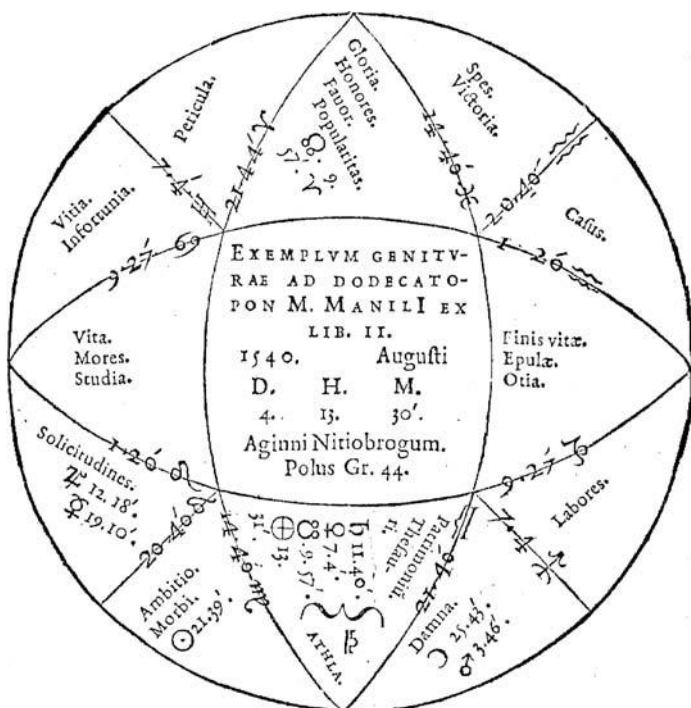


Fig. 1.5: Joseph Justus Scaliger's horoscope (see note 111)

ical world-view is principally based on the pantheistic cosmology and the cosmopolitanism of the Stoic philosophy,¹¹³ hence it was the ideal argument for what Ernst Zinn called the Roman "Weltgedicht".¹¹⁴ This universalistic outlook influenced Dante and then in particular the didactic poetry of the

nelle pratiche magiche e alchimiche insieme con strutture formalizzate matematicamente e una precisa disposizione a commisurare in termini universali le relazioni tra ciò che l'esperienza fenomenica offre all'individuo e le costruzioni fisico-matematiche derivate dall'osservazione empirica del moto degli astri."

¹¹³ See Franz Boll, "Die Entwicklung des astronomischen Weltbildes im Zusammenhang mit Religion und Philosophie," in: *Kultur und Gegenwart* III.3: *Astronomie* (Leipzig: 1913), pp. 1–56, reprinted in: *Kleine Schriften*, pp. 225–282, in particular p. 48 = 275: "im letzten Grunde identisch," cf. Hübner, "Manilius als Astrologe und Dichter," pp. 234f. with n. 323. See also Cyril Bailey, *Phases in the religion of ancient Rome*, Sather Classical Lectures. 10 (Berkeley: 1932, reprinted 1972 and 1981), p. 252.

¹¹⁴ Ernst Zinn, "Die Dichter des alten Rom und die Anfänge des Weltgedichts," *Antike und Abendland* 5 (1956): 7–26, reprinted in *Römertum*, ed. Hans Oppermann (Darmstadt: 1962, 1970³), pp. 155–187, once more in: *Viva Vox. Römische Klassik und deutsche Dichtung*, ed. Michael von Albrecht, Studien zur klassischen Philologie. 80 (Frankfurt: 1994), pp. 123–148.

Renaissance. Furthermore, it fulfilled the ideal of polymathy, taken over from Cicero, pursued by the *uomo universale*, whose prototype is seen in Leon Battista Alberti according to Jacob Burckhardt.¹¹⁵ Strikingly enough, the “integrative force” of the humanists has been evoked.¹¹⁶

In Antiquity astrology was combined with Neoplatonism by Numenius, Porphyry, Proclus, and Macrobius. Thus it was received in the Renaissance along with the lore of Plato, partly as an antidote to the Aristotelianism that was characteristic of advanced scholasticism. The dialogue of *Hermippos* written in the Platonic manner dates from the 14th century, and it was regarded as an authentic Platonic work for a long time.¹¹⁷ Ficino’s *Theologia Platonica* is based on the Neoplatonic lore, especially its mystical part. The precarious upright position of man, that was appreciated also by astrologers because it repeats the delicate equilibrium of the entire universe,¹¹⁸ could be related easily to the *dignitas* of mankind, as well as the religious psychology of the souls up to the One could be related to the return of the souls ascending the eighth sphere of the fixed stars through the seven planetary spheres (see Fig. 1.3).¹¹⁹ Many writings give evidence of this astral religiosity.

In general, the philosophical basis of astrology, i.e., the philosophy of the Stoics, is derived from Plato. The cosmopolitical openness of the Stoic lore facilitated a religious syncretism in the Renaissance,¹²⁰ and permitted

¹¹⁵ August Buck, “Der Beitrag des Renaissance-Humanismus zur Ausbildung des naturwissenschaftlichen Denkens,” *Sitzungsberichte der Gesellschaft zur Beförderung der gesamten Naturwissenschaften zu Marburg* 87 (1966): 33–45, in particular p. 35.

¹¹⁶ Dieter Wuttke, “Humanismus als integrative Kraft. Die Philosophie des deutschen ‘Erzhumanisten’ Conrad Celtis. Eine ikonologische Studie zu programmatischer Graphik Dürers und Burgkmairs,” *artibus et historiae* 11 (1985): 65–99.

¹¹⁷ It was written by Johannes Kareones, see Fritz Jürss, *Studien zum spätantiken Dialog “Hermippos de astrologia,”* Diss. Berlin 1964; Emilie Boer, “Hermippos 4,” in *Der Kleine Pauly* 2 (1979), col. 1080. Vettius Valens 2,29 mentions a work of a certain Hermippus.

¹¹⁸ Manil. 2,247f. and 4,905f., see Hübner, *Die Eigenschaften der Tierkreiszeichen*, pp. 482–487; Id., “Manilius als Astrologe und Dichter,” p. 164f.

¹¹⁹ See Wilhelm Bousset, “Die Himmelsreise der Seele,” *Archiv für Religionswissenschaft* 4 (1901): 136–169 and pp. 229–273 (reprinted Darmstadt: 1960). The most important examples from Antiquity are Eratosthenes’ lost poem *Hermes* and the second book of Martianus Capella, *De nuptiis Philologiae et Mercurii*. The ascent is preceded by the descent, when the souls receive a different vice in each planetary sphere: Numenius frg. 31–34; Des Places in Porphy. antr. 21–24. 35 and Macr. somn. 1,12,1–4, see Wolfgang Hübner, “*Crater Liberi*,” *Himmelspforten und Tierkreis*, Sitzungsberichte der Bayerischen Akademie der Wissenschaften, philosophisch-historische Klasse. 2006/3 (Munich: 2006), p. 33 with n. 131; Id., “Wie kommen die Seelen vom Tierkreis auf die Erde?,” *Mene* 9 (2009): 175–190.

¹²⁰ See Buck, *Die Rezeption der Antike*, p. 94.

manifold eclectic borrowings from other spiritual trends like Orphism, the hieroglyphs of Horapollo, the Jewish Cabala, or alchemy.

The writings of Ficino, Pico della Mirandola and Giordano Bruno¹²¹ are marked by that eager search for analogy that characterizes the astrological method: astrologers sought the so-called “reasons” for their “correlations without any cause” wherever they could find them. The same method had been followed by the allegorical interpretation of poetry by the Stoics and the Christian fathers, taken over in the Middle Ages and the Renaissance. The method was further enhanced by the reception of Neoplatonism.¹²²

Another spiritual current of that period from about 1460 was Hermeticism, not only the cryptic lore to which this name refers, but also the worship of the planet Mercury. Astrologers as well as poets identified with the planetary god Mercury.¹²³ They adopted his name or employed his astrological symbol as a cryptogram.¹²⁴ In Rome, on Palm Sunday of 1484, Giovanni Mercurio da Correggio even put on winged shoes in order to demonstrate his identity with this god. Giordano Bruno integrated astrological elements into the wide field of Hermeticism combining it with the ancient memorial technique that, as is well known, served not only for giving a certain structure to the different objects to be memorized, but in a more general sense enabled the human mind to organize the infinite and immeasurable abundance of different phenomena in some way.¹²⁵ In his *Spaccio de la bestia trionfante* he boldly dares to project the complete stary vault into the human soul.¹²⁶ A mosaic of Hermes Trismegistus by Giovanni di Stefano even decorates the floor of the cathedral at Siena.

The influence of the *Corpus Hermeticum* was complemented by that of the *Picatrix*,¹²⁷ the interest in meteorology, geomancy, pyromancy,

¹²¹ See recently Barbara Kuhn, *Mythos und Metapher. Metamorphosen des Kirke-Mythos in der Literatur der italienischen Renaissance*, Humanistische Bibliothek. Texte und Abhandlungen, I 55 (Munich: 2003), pp. 477–571.

¹²² See Zintzen, “Antike und Renaissance,” pp. 112–114.

¹²³ See the examples given by Hübner (in n. 98).

¹²⁴ See Geneva, *Astrology and the Seventeenth Century Mind*, p. 167 on Abraham Ashmole.

¹²⁵ See Frances Amelia Yates, *Giordano Bruno and the Hermetic Tradition* (London – Chicago: 1964), who seems to pay too much attention to the magician. By the same, *The Art of Memory* (Chicago – London 1966, 1972² reprinted 1978).

¹²⁶ See Wolfgang Hübner, “Der verinnerlichte Himmel. Zu Giordano Brunos *Spaccio de la bestia trionfante*,” in *Text—Interpretation—Vergleich. Festschrift für Manfred Lentzen*, ed. Elisabeth and Joachim Leeker (Berlin: 2005), pp. 306–333.

¹²⁷ *Picatrix*, ed. Hellmut Ritter, Martin Plessner, and Elisabeth Jaffé, Studien der Bibliothek Warburg, 12 (Berlin: 1933); “*Picatrix*”. *Das Ziel des Weisen von Pseudo-Mağrifi*, translated into German from the Arabic by Hellmut Ritter and Martin Plessner, Studien

capnomancy, hydromancy, physiognomy and metoposcopy, chiromancy,¹²⁸ necromancy, die-casting, and the *Sortes Virgilanae*—not to omit the belief in miracles, and the study of Roman divination from the collection of prodigies like the epitome from Livy made by Julius Obsequens.¹²⁹ Many scholars wrote on divination in that period,¹³⁰ and numerous pamphlets proclaimed the appearance of comets, and all kinds of monstrosity.

The Aesthetics of Astrology

Finally we have to consider the enormous aesthetic effect of the heavenly constellations that we have already touched upon in the beautiful representations on planispheres, maps and globes. Already Cicero praises the superior beauty of the *sphaera solida* over that of the armillary sphere.¹³¹ But also the astrological system in the strict sense attracted Renaissance thinkers, as did pagan mythology and polytheism. Hermann Usener¹³²

der Bibliothek Warburg, 27 (London: 1962, reprinted Nendeln: 1978). The name "Picatrix" derives from "Hippocrates". See also n. 152 below.

¹²⁸ Chiromancy came from India, see Brian Vickers, "Kritische Reaktionen auf die okkulten Wissenschaften in der Renaissance," in *Zwischen Wahn, Glaube und Wissenschaft*, pp. 167–239, in particular p. 200. Capnomancy was already practised by the Babylonians.

¹²⁹ See Peter Lebrecht Schmidt, *Iulius Obsequens und das Problem der Livius-Epitome. Ein Beitrag zur Geschichte der lateinischen Prodigienliteratur*, Abhandlungen der Akademie der Wissenschaften und der Literatur Mainz, geistes- und sozialwissenschaftliche Klasse 1968/5 (Wiesbaden: 1968), pp. 153–242.

¹³⁰ Polydorus Vergilius, *Dialogorum de prodigiis libri tres* (Basle: 1531); Joachim Camerarius, *Norica sive de ostentis libri duo* (Wittenberg: 1532); Caspar Peucer, *Commentarius de praecipuis divinationum generibus* (Wittenberg: 1553). Compare Walther Ludwig, "Pontani amatores. Joachim Camerarius und Eobanus Hessus in Nürnberg," in *Pontano und Catull*, ed. Thomas Baier (Tübingen: 2003), pp. 11–45, in particular pp. 18–23; Id., "Zukunfts-voraussagen in der Antike," pp. 20–33 = 141–154.

¹³¹ Cic. rep. 1,21 *cuius ego sphaerae* [the armillary sphere]... *speciem ipsam non sum tanto opere admiratus, erat enim illa* [the solid sphere] *venustior et nobilior in vulgus, quam ab eodem Archimede factam posuerat in templo Virtutis Marcellus idem* [sc. anno 212]. This text was still unknown to the Renaissance, but see the rich commentary of Arthur Stanley Pease on Cic. nat. deor. 2,88. On the different instruments in Antiquity see Schlachter-Gisinger, *Der Globus*.

¹³² Hermann Usener, review of A. Bouché-Leclercq, *L'astrologie grecque*, "Byzantinische Zeitschrift" 10 (1901): 246–250, reprinted in: *Kleine Schriften* (Leipzig: 1912–1913, Osnabrück 1965), vol. 3, pp. 372–376, in particular 247; Franz Boll, "Der Stern glaube in seiner historischen Entwicklung. Nachschrift von Vorlesungen, gehalten im Winter 1922/23 an der Universität Heidelberg," reprinted in *Kleine Schriften*, pp. 369–396, in particular p. 387: astrology is a "Grundbegriffsform allen mythologischen Denkens"; Martin P. Nilsson, *The Rise of Astrology in the Hellenistic Age*, Meddelande från Lunds Astronomiska Observatorium. ser. II, Nr. 111 (Lund: 1943), 8 "its [Astrology] fundamental presupposition was mythical"; Fritz Jürrs, "Über die Grundlagen der Astrologie," *Helikon* 7 (1967): 63–80, in particular pp. 69–80. Hübner, "Manilius als Astrologe und Dichter," pp. 236f. Fundamental is Ernst Cassirer, *Die Begriffsform im mythischen Denken*, Studien der Bibliothek Warburg, 1 (Leipzig – Berlin: 1922), reprinted in *Wesen und Wirkung des Symbolbegriffs* (Darmstadt:

calls astrology a “Nachgeburt mythologischer Denkweise.” This is true not only for the so-called “mythical” way of associations, as we have seen, but also for the nomenclature of the stars and constellations. Since the Greeks had transferred the Babylonian planetary gods to their own polytheism, astrology and ancient mythology are closely related. The nomenclature after the gods, despite several attempts at change, in Antiquity as well as in modern times, persisted and was even extrapolated.¹³³ The symmetry of the sevenfold planetary order (see Fig. 1.3) shows once more the enormous flexibility and adaptability of Greek polytheism. Furthermore, the manifold fanciful constellations have determined prognostication until our time.

When Antiquity tried to prove the existence of their gods, people always pointed to the beauty and the exquisite order of the cosmos.¹³⁴ When Copernicus tried to prove the central position of the sun, he not only referred to the evidence that the sun grants all our terrestrial life, but he was able to relate to ancient imagination:¹³⁵ first the widespread pagan cult of the sun,¹³⁶ and secondly the astrological (“Chaldean”) planetary

1976⁵). Id., *Philosophie der symbolischen Formen*, vol. 2: *Das mythische Denken* (Berlin: 1925, Darmstadt 1973⁶). Ernst Topitsch, *Vom Ursprung und Ende der Metaphysik. Eine Studie zur Weltanschauungskritik* (Munich: 1957/8, 1972²), chapter 1: “Grundformen des Denkens im Mythos”.

¹³³ See Wolfgang Hübner, “Antike in der Astrologie der Gegenwart,” in *Die Antike in der europäischen Gegenwart*, ed. Walther Ludwig, Veröffentlichung der Joachim Jungius-Gesellschaft der Wissenschaften Hamburg, 72 (Göttingen: 1993), pp. 103–124, 179.

¹³⁴ The double sense of the Greek κόσμος as “order” and “beauty” was imitated by Roman philologists with etymology of *caelum* “heaven” according to *caelare* “chase”, see III c. 78,10–15 s.v. *caelo* and III c. 78,80–79,6 s.v. *caelum*; Robert Maltby, *A Lexicon of Ancient Latin Etymologies*, ARCA classical and medieval texts, 25 (Leeds: 1991), 19.

¹³⁵ For the reception of the ancient system by Copernicus and Kepler see Fritz Krafft, “Johannes Keplers Beitrag zur Himmelsphysik,” in *Internationales Kepler-Symposium, Weil der Stadt 1971*, ed. Fritz Krafft et al., Arbor scientiarum, ser. A vol. 1 (Hildesheim: 1973), pp. 55–139, in particular p. 78 with n. 71; Id., *Progressus retrogradus. “Die ‘Copernicanische Wende’ als Ergebnis absoluter Paradigmatreue,” in Die Struktur wissenschaftlicher Revolutionen und die Geschichte der Wissenschaften. Symposium der Gesellschaft für Wissenschaftsgeschichte anlässlich ihres zehnjährigen Bestehens, 8–10. Mai in Münster*, ed. Alwin Diemer, Studien zur Wissenschaftstheorie, 10 (Meisenheim: 1977), pp. 20–48, in particular p. 41 with n. 61; Id., “Nicolaus Copernicus. Astronomie und Weltbild an der Wende zur Neuzeit,” in *Lebenslehren und Weltentwürfe im Übergang vom Mittelalter zur Neuzeit. Politik—Bildung—Naturkunde—Theologie. Bericht über Kolloquien der Kommission zur Erforschung der Kultur des Spätmittelalters 1983–1987*, ed. Hartmut Boockmann, Bernd Moeller and Karl Stackmann, redacted by Ludger Grenzmann, Abhandlungen der Akademie der Wissenschaften in Göttingen, philologisch-historische Klasse, III 179 (Göttingen 1989), pp. 282–335, in particular p. 332 n. 109.

¹³⁶ See the fundamental work of Franz Cumont, “La théologie solaire du paganisme romain,” in *Mémoires présentés par divers savants à l’Académie des Inscriptions et Belles-Lettres de l’Institut de France* 12 (Paris: 1913), pp. 447–479, in particular p. 447 and p. 452f.;

order that—among many other theories—prevailed (see Fig. 1.3),¹³⁷ where the sun, albeit turning around the earth together with the other planets, occupies the very middle between, on one side, the two hot planets moving nearby (Mars and Venus), and, on the other, the two cold and wet planets moving far away (Saturn and the moon), and on both sides between the two contraries, the two well-tempered intermediate planets Jupiter and Mercury. So one has to avoid an expression like “centralità simbolica del Sole,”¹³⁸ for it is an actual imagery of centrality, that Copernicus underlines following Cicero:¹³⁹ “In medio vero omnium residet Sol. Quis enim in hoc pulcherrimo templo lampadem hanc in alio vel meliori poneret, quam unde totum simul possit illuminare?” So the sun is praised in a more or less hymnal mood in poetry and prose.¹⁴⁰

The aesthetic quality of astrological concepts has been even more inspiring in the fine arts. The planets were represented (sometimes together with their zodiacal “houses”) in the plastic arts and reliefs, for instance on a prominent capital on the southwestern angle of the doge’s palace in Venice (see Fig. 1.6).¹⁴¹

On festive occasions, chariots with the planetary gods adorned with their attributes moved in procession.¹⁴² Whereas in Homer only Mars appears as charioteer,¹⁴³ later mythologists introduced the sun-god on his quadriga drawn by horses and the moon-goddess on a biga drawn by horned cattle. In late Antiquity, the chariots of the circus race with

p. 472 with n. 1; Wolfgang Fauth, *Helios Megistos Zur synkretistischen Theologie der Spätantike*, Religions in the Graeco-Roman World, 125 (Leyden: 1995).

¹³⁷ First transmitted by Archimedes (see n. 77), and described in the most informative way by Procl. in Remp. II, 221,1–26 Kroll. See Hübner, “Religion und Wissenschaft,” pp. 12–16.

¹³⁸ Francesco Tateo quoted by Georg Roellenbleck, “L’astrologia nella poesia del Pontano: l’*Urania*,” in *L’astrologia e la sua influenza nella filosofia, nella letteratura e nell’arte dall’età classica al rinascimento* (Milan: 1992), pp. 187–199, in particular p. 191.

¹³⁹ Nicolaus Copernicus, *De revolutionibus libri sex*, ed. Herbert Maria Nobis and Bernhard Sticker, Nicolaus Copernicus, Gesamtausgabe. II (Hildesheim: 1984), pp. 1, 10, 20, 12. For the wording cp. Cic. rep. 6,17 (followed by Firm. math. 1,10,14); Avien. Arat. 1548–1159 (contemporary to Julianus’ speech on Helios); Avien. orb. terr. 1308f.; Mart. Cap. 2,185–193.

¹⁴⁰ For instance Bonincontri, *De rebus naturalibus et divinis* II 3, 16–20 (p. 590 Heilen). Tommaso Campanella “Al sole”, see Cesare Vasoli, *I miti e gli astri* (Naples: 1977), p. 350. Prose versions from Copernicus and Kepler *ibid.*, p. 310.

¹⁴¹ See Blume, *Regenten des Himmels*, pp. 92–94.

¹⁴² Blume, *ibid.*, pp. 191–194.

¹⁴³ Hom. Il. 5, 355–366; 15, 119f., cp. Hes. scut. 191–196, al. His chariot is armed by Deimos and Phobos, that later were interpreted as his horses (in modern times the newly discovered two moons were named according to them).



Fig. 1.6: Capital of the Doge's Palace in Venice: Mercury with Virgin (Virgo) and Twins (Gemini)

their different colors, moving around the turning point of the circus, were identified with the planets and their retrograde motions.¹⁴⁴ Modern theatre buildings had a round shape conceived as an image of the heavenly sphere: for instance, the Cortile del Belvedere built for Pope Julius III by Pirro Ligorio.¹⁴⁵ In the Globe Theatre in London plays were acted under a huge zodiac that united actors and spectators in a lively community. In Antiquity, the poet Manilius, in a long survey across the solar year, had

¹⁴⁴ The twelve *carceres* correspond to the twelve zodiacal signs, the colours to those of the planets, in more detail Anth. 197 Riese *De circensibus*, see Pierre Willeumier, "Cirque et Astrologie," *Mélanges d'Archéologie et d'Histoire* 44 (1927): 184–209. More extensively, but without any source Louis Hauteceœur, *Mystique et architecture. Symbolisme du cercle et de la coupole* (Paris: 1954), p. 168f.

¹⁴⁵ See Donat de Chapeaurouge, "Eine Zirkusrekonstruktion des Pirro Ligorio," *Antike und Abendland* 18 (1973): 89–96, in particular pp. 93–95. In the Vatican, there was, in former times, the circus of Gaius and Nero. Cp. also Peter Schiller, "*Sapiens dominabitur astris*". *Studien über den Zusammenhang von Architektur und Himmelskunde bei Andrea Palladio* (Freiburg: 1985); Gerd Blum: "*Fenestra prospectiva*—Das Fenster als symbolische Form bei Leon Battista Alberti und im Herzogpalast von Urbino," in *Leon Battista Alberti: Humanist—Architekt—Kunsttheoretiker*, ed. Joachim Poeschke and Candida Syndikus (Münster: 2008), pp. 77–122, in particular p. 93f.

deduced the manifold individual characters from the twelve zodiac signs and the numerous paranatellonta, on the model of the “biotic” realism of the New Comedy of Menander.¹⁴⁶

The variegated constellations decorate representative halls, either as reliefs on a ceiling, such as in the anatomical theater of the Archiginnasio in Bologna, or on the inside walls, such as in the Sala del Mappamondo (or Stanza delle carte geografiche) in the Palazzo Farnese in Caprarola,¹⁴⁷ and in the “Salone” in Padua,¹⁴⁸ together with the strange images of the decans in the “Sala dei mesi” in the Palazzo Schifanoia in Ferrara.¹⁴⁹

Particular attention was paid to the images of the decans, as they are described in the first chapter of the sixth book of the “Great Introduction” by Abū Ma‘šar.¹⁵⁰ The author diligently treats all 36 decans, and each decan three times according to Persian, Indian and Greek traditions, resulting in 108 single images (*facies*).

Besides wall-decoration, this strange and imaginative fantasy was manifest in manuscripts¹⁵¹ and poetry. Giordano Bruno employed these

¹⁴⁶ Manil. 5, 476 *qui vitae ostendit vitam*. See Soldati, *La poesia astrologica nel Quattrocento*, 12; Enrico Flores, *Contributi di filologia maniliana* (Naples: 1966), pp. 36 and 91. This prognostication given for Aquarius and Cepheus has two specific astrological reasons, see Hübner, “Astrologie in der Renaissance,” pp. 62–65; Id. *Die Eigenschaften der Tierkreiszeichen*, pp. 189–191; Id., “Menander und Augustus unter dem Steinbock,” in Skenika, *Beiträge zum antiken Theater und seiner Rezeption. Festschrift zum 65. Geburtstag von Horst-Dieter Blume*, Susanne Gödde and Theodor Heinze, eds. (Darmstadt: 2000), pp. 253–265, in particular pp. 259–264; Id., ed., Manilius, *Astronomica*, book V, Sammlung wissenschaftlicher Commentare (Berlin: 2010), II: 269f. and 272f. on Manilius 5, 476: p. 449ff.

¹⁴⁷ The painter is unknown. The fresco is mostly called a zodiac, but it embraces the entire starry vault, as far as it was visible at that time.

¹⁴⁸ See Antonio Barzon, *I cieli e la loro influenza negli affreschi del salone in Padova* (Padova: 1924); Blume, “Regenten des Himmels,” p. 85.

¹⁴⁹ See Aby Warburg, “Italienische Kunst und internationale Astrologie im Palazzo Schifanoia zu Ferrara” (1912), in *Gesammelte Schriften*, vol. 1, pp. 459–481 and pp. 627–644; once more in: *Ausgewählte Schriften und Würdigungen*, pp. 173–198. Compare Marco Bertozzi, *La tirannia degli astri. Aby Warburg e l'astrologia di Palazzo Schifanoia* (Livorno: 1999²); Id., ed., *Aby Warburg e le metamorfosi degli antichi dèi. Atti del convegno “Il cosmo incantato di Schifanoia”*, Ferrara 24.–26. 09. 1998 (Ferrara: 2002); Blume, *Regenten des Himmels*, p. 201.

¹⁵⁰ Fundamentally studied by Franz Boll, *Sphaera. Neue griechische Texte und Untersuchungen zur Geschichte der Sternbilder* (Leipzig: 1903, reprinted Hildesheim: 1967) with edition and German translation of chapter 6, 1; see also Wilhelm Gundel, *Dekane und Dekansternbilder. Ein Beitrag zur Geschichte der Sternbilder der Kulturvölker*, Studien der Bibliothek Warburg, 19 (Glückstadt: 1936, ed. corrected by Hans Georg Gundel, Darmstadt 1969²).

¹⁵¹ Especially by Georgius Zothorus Zaparus Fendulus, see the *Verzeichnis astrologischer und mythologischer illustrierter Handschriften des lateinischen Mittelalters*, III 1: *Handschriften in englischen Bibliotheken* by Fritz Saxl and Hans Meier, ed. Harry Bober, Catalogue

πρόσωπα / *facies* for his *Ars memoriae*. The iconography has recently been studied by the Polish scholar Ewa Śnieżyńska-Stolot.¹⁵² The tendency towards individualizing ποικιλία was even enhanced when Pietro d'Abano, continuing the ancient *Myriogenesis* or *Monomoiriai*,¹⁵³ invented and drew an appropriate image for each of the 360 degrees of the ecliptic.¹⁵⁴

The aesthetic value of astrology is elegantly handled in the work of the didactic poets who amalgamated poetry, mythology and science. Didactic poetry reached its peak in the history of literature just when astrology reached its peak. Already in the high Middle Ages between 1150 and 1250 there was a large number of didactic poems,¹⁵⁵ but between circa 1500 and 1800, more than 180 such poems have been counted.¹⁵⁶ In Antiquity, one particular argument attracted didactic poetry, and the stars were praised in the manner of the Aratean tradition, which was preferred because of its universalism and aesthetic value. Aratus and his followers had described the universe as a work of art embracing the entire unchangeable world from the remotest regions of the northern fixed stars down to the depth

of astrological and mythological illuminated manuscripts of the Latin Middle Ages, vol. 3,1 (London: 1953, reprinted Nendeln: 1978), pp. 247–268 and introduction pp. lx–lxxv.

¹⁵² Ewa Śnieżyńska-Stolot, *Ikongrafia znaków zodiaku i gwiazdozbiorów w rękopisie monachijskim Abrahama Ibn Ezry* (Krakow: 1998). Ead., *Ikongrafia astrologiczna w średniowieczu stopnie znaków zodiaku = Astrological Iconography in the Middle Ages, the Zodiacal Grades*, collaboration and English translation by Joanna Komorowska (Krakow: 2002). Ead., *Astrological Iconography in the Middle Ages: The Decanal Planets*, cooperation and English translation by Joanna Komorowska (Krakow: 2003). Ead., *Picatrix Latinus. Ikongrafia planet i planet dekanicznych w rękopisie krakowskim* (Krakow: 2009), see n. 127.

¹⁵³ Firm. math. 8, 18–30.

¹⁵⁴ Petrus Aponensis, *Astrolabium planum* (Augsburg: 1488); *Astrolabium planum in tabulis ascendens* (Venice: 1502). German translation: *Das Heidelberger Schicksalsbuch. Das 'Astrolabium planum' deutsch aus CPG 832 der Universitätsbibliothek Heidelberg*, ed. Bernhard Haage (Frankfurt 1981); Id., "Das 'Astrolabium planum' des Codex Palatinus Germanicus 832. Ein Forschungsbericht," *Heidelberger Jahrbücher* 29 (1985): 87–105, Id., "Dekane und Parantellonta des 'Astrolabium planum' in einem Nürnberger Fragment," *Archiv für Kulturgeschichte* 60 (1978): 21–140. Compare also Boll, *Sphaera*, pp. 434–449.

¹⁵⁵ See Thomas Haye, *Das lateinische Lehrgedicht im Mittelalter. Analyse einer Gattung, Mittellateinische Studien und Texte*, 22 (Leyden: 1997), pp. 363–397 with an outlook to the further development until the 18th century.

¹⁵⁶ Heinz Hofmann, "Aristaeus und seine Nachfolger. Bemerkungen zur Rezeption des Aristaeus-Epyllions in der neulateinischen Lehrdichtung," *Humanistica Lovaniensia* 52 (2003): 342–398, in particular p. 350, Id., "Neulateinische Literatur: Aufgaben und Perspektiven," *Neulateinisches Jahrbuch* 2 (2000): 57–97, in particular p. 90 with n. 172.

of the earth.¹⁵⁷ The great Aldine edition from 1499¹⁵⁸ unites prose and Aratus-inspired poetry in the following order: Firmicus Maternus, *Mathesis* (with the supplements of Pescennius Niger), Manilius' *Astronomica* (placed in the middle between astrology and the Aratean poems), Germanicus' *Aratea* (first contrary to the chronological order because this translation, being the most exact one, had prevailed in the Middle Ages), Cicero's *Aratea*, Avienus' *Aratea*—and finally the Greek original of Aratus together with some scholia and the Greek commentary written by Theon, and followed by the so-called Σφαῖρα Πρόκλου (actually an extract from the Εἰσαγωγή of Geminus). The printers added a wonderful woodcut (see Fig. 1.7) representing all the visible constellations, in the tradition of medieval planispheres.¹⁵⁹ This collection was a first step to the famous *Syntagma Arateorum* that the 17-year-old Hugo Grotius, a pupil of Joseph Justus Scaliger, edited 101 years later.¹⁶⁰

Aratus' *Phainomena*, extremely popular in Antiquity,¹⁶¹ do not contain any judicial astrology in our strict sense, but they describe the universe in

¹⁵⁷ On Aratus' "Antiklimax" see Walther Ludwig, "Die Phainomena Arats als hellenistische Dichtung," *Hermes* 91 (1963): 425–448; furthermore, Hübner, "Manilius als Astrologe und Dichter," pp. 242–268; more in general Id., "Der *descensus* als ordnendes Prinzip der *Naturalis historia* des Plinius," in *Die Enzyklopädie im Mittelalter vom Hochmittelalter bis zur frühen Neuzeit*, ed. Christel Meier, Münstersche Mittelalter-Schriften. 78 (Munich: 2002), pp. 25–41. The aesthetic dimension at the cost of the religious one has been underlined by Christos Fakas, *Der hellenistische Hesiod. Arats Phainomena und die Tradition der antiken Lehrepik* (Wiesbaden: 2001). On the ecphrastic character of the Aratean poetry see Alfonso Traina, "*Laboranti similis*. Storia di un omerismo virgiliano," *Maia* NS 21 (1969): 71–78, reprinted in: *Poeti latini (e neolatini)* 2 (Bologna: 1981), pp. 91–103; Roberta Montanari Caldini, *Illusione e realtà nel cielo dei poeti* (Florence: 1992), reprinted in *Prometheus* 19 (1993), pp. 183–210; Hübner, "Manilius als Astrologe und Dichter," pp. 200f.; Id., "Zur Ikonographie des Sternhimmels," in *Ikonographie und Ikonologie*, ed. Wolfgang Hübner and Klaus Stähler (Münster: 2004), pp. 147–168.

¹⁵⁸ See n. 36 above.

¹⁵⁹ See Hans Georg Gundel, *Zodiakos. Tierkreisbilder im Altertum. Kosmische Bezüge und Jenseitsvorstellungen im antiken Alltagsleben*, Kulturgeschichte der antiken Welt. 54 (Mainz: 1992), pp. 204–210 no. 11–21.

¹⁶⁰ Hugo Grotius, *Syntagma Arateorum* (Leyden: 1600).

¹⁶¹ See Boll, *Die Entwicklung des astronomischen Weltbildes*, 38 = 264 "der unermeßliche Erfolg"; Id., in Franz Boll and Wilhelm Gundel, *Stern Glaube und Sterndeutung* (orig. ed. 1918; Darmstadt 1977), 21: "die für uns unfassbare Popularität seines Gedichtes"; Douglas Alexander Kidd, "The fame of Aratus," *Aumla. Journal of the Australasian Universities Language and Literature Association* 15 (1961): 5–18; William Sale, "The Popularity of Aratus," *The Classical Journal* 61 (1966): 160–164; Hubert Zehnaker, "D'Aratos à Avienus: Astronomie et idéologie," *Illinois Classical Studies* 14 (1989): 317–329. Wolfgang Hübner, "Die Rezeption der *Phainomena* Arats in der lateinischen Literatur," in *Wissensvermittlung in dichterischer Gestalt*, ed. Marietta Horster and Christiane Reitz, Palingenesia. 85 (Stuttgart: 2005), pp. 133–154.



Fig. 1.7: Planisphere of the *Aldina* from 1499 (see note 36)

an ekphrastic form. This work was the model for many poems, not only for the three more or less exact extant translations. Virgil took from it some weather-signs in the first book of his *Georgics*,¹⁶² Germanicus added some prognostications, Manilius the zodiacal astrology.¹⁶³ In the Renaissance, it was first imitated by Basinio Basini in the court of the Malatesta at Rimini.¹⁶⁴ After Poggio had rediscovered Manilius in 1417,¹⁶⁵ this poet

¹⁶² Cp. Fulgentius, *Virg. cont.* p. 84, 9 *Helm primus vero georgicorum est omnis astrologus.*

¹⁶³ See Hübner, "Manilius als Astrologe und Dichter," pp. 242–268; Katharina Volk, *Manilius and his Intellectual Background* (Oxford: 2009), pp. 188–192.

¹⁶⁴ On the following see Soldati, *La poesia astrologica nel Quattrocento*, pp. 74–104.

¹⁶⁵ See above n. 39.

was received and imitated with enthusiasm. People studied not only his poetry, but also his astrological lore. The designation of “editio princeps” of this work could belong to one or the other of two rather early examples: one published by Regiomontanus in Nuremberg just before his premature death at the end of 1473 or the beginning of 1474,¹⁶⁶ the other, an anonymous one, which appeared in Bologna in 1474.¹⁶⁷ Lorenzo Bonincontri commented on the *Astronomica* in public lectures given in Florence and edited it with a commentary.¹⁶⁸ In the spirit of Manilius, he wrote two didactic poems.¹⁶⁹ In the dark years of research in astrology from the 17th to the 19th century knowledge of this lore was generally taken from the famous commentary written by Scaliger.¹⁷⁰ The posthumous third edition was printed as late as in 1655,¹⁷¹ although Claude Saumaise (1588–1633), Scaliger’s counterpart at the University of Leyden, in his voluminous work *De annis climactericis* had refuted the astrology at great length seven years before.¹⁷² Scaliger himself regarded his commentary as his best performance after his *Opus de emendatione temporum*, in which he criticized the Gregorian calendar reform of 1582.¹⁷³ He puts the style of Manilius on a level with Ovidian elegance, but adding that Manilius’ *maiestas* exceeds that of his contemporary.¹⁷⁴ Even the Pico della Mirandola exempts

¹⁶⁶ *M. Manilii Astronomicon* [...], (Nuremberg: [n.d.]), see Georg Christoph Schwarz, *Commentatio de prima Manilii astronomicorum editione a Io. Regiomontano Norimbergae publicata* (Altdorf: 1764); Adolf Cramer, *Über die ältesten Ausgaben von Manilius’ Astronomica* (Ratibor: 1893), p. 7f.

¹⁶⁷ *M. Manilii mathematici astronomicon ad Caesarem Augustum* (Bologna: 1474). See Cramer, *Über die ältesten Ausgaben*, p. 8f.

¹⁶⁸ *Laurentii Bonincontri Miniatisensis in C. Manilium Commentum* (Rome: 1484).

¹⁶⁹ Only the second was published in that time: Lorenzo Bonincontri, *De Rebus Coelestibus* (Venice: 1526). A critical edition of both poems has been provided by Stephan Heilen: *Laurentius Bonincontrius Miniatisensis, De rebus naturalibus et divinis. Zwei Lehrgedichte an Lorenzo de’ Medici und Ferdinand von Aragonien, Einleitung und kritische Edition*, Beiträge zur Altertumskunde, 129 (Stuttgart – Leipzig: 1999). See also Soldati, *La poesia astrologica nel Quattrocento*, pp. 154–198.

¹⁷⁰ See Soldati, *La poesia astrologica nel Quattrocento*, p. 106.

¹⁷¹ *Marci Manilii Astronomicon a Josepho Scaligero ex vetusto codice Gemblacensi infinitis mendis repurgatum* (Straßburg: 1655). For the earlier edition see n. 111.

¹⁷² Claude Saumaise, *De annis climactericis et antiqua Astrologia diatribae* (Leiden: 1648).

¹⁷³ Joseph Justus Scaliger, *Opus de emendatione temporum* (Leyden: 1583, corrected 1598). Compare *Manili astronomicon liber II*, ed. H[earthcote] W[illiam] Garrod (Oxford: 1911), lxxxi, in n. 3.

¹⁷⁴ *Marci Manilii Astronomicon* prol. p. 18: “poeta ingeniosissimus, nitidissimus scriptor, qui obscuras res tam luculento sermone, materiam morosissimam tam iucundo charactere exornare potuerit, Ovidio suavitate par, maiestate superior.” Further judgments are gathered by August Kraemer, *Ort und Zeit der Abfassung der Astronomica des Manilius* (Frankfurt: 1904), pp. 3–27, in particular p. 7 with n. 20.

Manilius from his condemnation of the rest of astrology, on the grounds that he is a poet.¹⁷⁵

Bonincontri treats at length¹⁷⁶ the planets that Manilius omitted for poetical reasons, in an ascending order.¹⁷⁷ So did his friend Giovanni Pontano at the very beginning of his *Urania*.¹⁷⁸ The *Urania* is the best poem on the stars written in the Renaissance and has often been imitated.¹⁷⁹ On the model of the Aratean concept of a *descensus*, Pontano puts the poem at the top of a descending triad: *Urania* – *Meteora* – *De hortis Hesperidum*, in reverse order with respect to composition. These are the first printed didactic astrological poems of modern times.¹⁸⁰ The receptivity of the Renaissance poets to the ancient tradition is so

¹⁷⁵ Pico della Mirandola, *Disputationes* 1,1 422 (Basel: 1557) "Iam Mallium [Manilium] nisi esset poeta bone Deus, quo risu prosequeremur, eqs." on Manil. 1, 456–465 and 5, 745. See Soldati, *La poesia astrologica nel Quattrocento*, p. 218.

¹⁷⁶ Bonincontrius, *De rebus naturalibus*, II 2, 191–3, 1115 (conclusion of the work): in contrast to the ancient manner overlapping the limit of two books—Pontano divided the zodiac into two parts: *Urania* 2, 1–3, 507. On modern supplements of lacunose ancient works in general see Schmidt (as n. 38); Id., *Neulateinische Supplemente zur Aeneis*, Mit einer Edition der *Exsequiae Turni* des Jan van Foreest, in: *Acta Conventus Neo-Latini Lovaniensis, Proceedings of the First International Congress of Neo-Latin Studies*, Louvain 23–28 August 1971 (Munich: 1973), pp. 517–555.

¹⁷⁷ See in more detail Hübner, "Manilius als Astrologe und Dichter," pp. 245–247.

¹⁷⁸ Pontano, *Urania* 1,32–770 and 1,882–920. See Soldati, *La poesia astrologica nel Quattrocento*, 254–311; Wolfgang Hübner, "De Pontani *Uraniae* prooemio," in *Alaudae ephemeridis nova series, fasciculus primus*, ed. Anna Elissa Radke (= *Noctes Neolatinae / Neo-Latin Texts and Studies*, 5) (Hildesheim: 2005), pp. 15–36. Despite many borrowings from Vergil's *Georgica* the *Urania* comes very close to Manilius' *Astronomica* in details and composition, see Wolfgang Hübner, "Die Rezeption des astrologischen Lehrgedichts des Manilius in der italienischen Renaissance," in *Humanismus und Naturwissenschaften*, ed. Fritz Krafft et al., = *Beiträge zur Humanismusforschung*, 6 (Boppard: 1980), pp. 39–67, in particular pp. 56–61; some details Id., "Perseus, Eridanus und Cola Piscis unter den Sternbildern in Pontanos *Urania*," *Humanistica Lovaniensia* 28 (1979): 139–166, in particular pp. 159–162; Id., "Astrologie in der Renaissance," pp. 277–279. For one other detail (*Urania* 3, pp. 483–507) see in Walther Ludwig, "Opuscula aliquot elegantissima des Joachim Camerarius und die Tradition des Arat," in *Joachim Camerarius*, ed. Rainer Kößling and Günther Wartenberg (Tübingen: 2003), pp. 97–132, reprinted in *Miscella Neolatina. Ausgewählte Aufsätze 1989–2003*, ed. Astrid Steiner-Weber, *Noctes neolatinae*, 2 (Hildesheim: 2004), I 508–540, in particular pp. 110f. = 520f.

¹⁷⁹ One example is treated by Ludwig, "Opuscula," pp. 108–129. On the reception of Pontano in Camerarius Id., "Pontani amatores," pp. 24f. (*Meteora*) and 38–40 (*Urania*).

¹⁸⁰ Joannis Joviani Pontani *Opera, Urania sive de stellis libri quinque. Meteororum liber unus. De hortis Hesperidum libri duo* [...] (Venice: 1505, later on Venice: 1513 and Florence 1514). On the earliest poem of the triad see Mauro de Nichilo, *I poemi astrologici di Giovanni Pontano. Storia del testo, con un saggio di edizione critica del "Meteororum liber"*, *Contributi alla storia della cultura umanistica*, 1 (Bari: 1975).

profound that their works in fact enable us to better understand Manilius' *Astronomica*.¹⁸¹

The Decline of Astrology

As soon as the first astrological books were printed at the end of the 15th century, the sharpest refutation of astrological belief appeared, written in the twelve books of the famous *Disputationes adversus astrologiam divinatricem* (1496) by Giovanni Pico della Mirandola,¹⁸² who however did not generally defend individual free will against determinism, but oscillated between reform and rejection.¹⁸³ From that time onwards, scholars were divided between adversaries and defenders.¹⁸⁴ Contemporary to Pico, but in a more popular mood, Girolamo Savonarola argued in the vernacular *Contra l'astrologia divinatrice*,¹⁸⁵ that Gianfrancesco Pico, Pico's nephew, who edited the *Disputationes* after the premature death of his uncle, opposed astrology in his *Examen vanitatis doctrinae gentium*,¹⁸⁶ as did Luther,¹⁸⁷

¹⁸¹ See Hübner, "Die Rezeption des astrologischen Lehrgedichts des Manilius," p. 66. The successful *Zodiacus vitae, hoc est De hominis vita, studio ac moribus optime instituendis*, written by Marcellus Palingenius Stellatus, first printed in Venice in about 1531, follows a mode of titling of that time, and the arguments of the twelve chapters named according to the twelve zodiacal signs have no relation to them, see Hübner, *Zodiacus Christianus*, p. 51 with n. 92; Franco Bacchelli, "Note per un inquadramento biografico di Marcello Palingenio Stellato," *Rinascimento* 25 (1985): 275–292. The signs of the zodiac are enumerated under Aquarius (313,11–13 in the edition Basel: 1789).

¹⁸² Giovanni Pico della Mirandola, *Disputationes adversus astrologiam divinatricem* (Bologna: 1496, then Venice 1498, Straßburg 1594). New edition by Eugenio Garin (Florence: 1944–1952). For the discussion on this work see Vanden Broecke, *The Limits of Influence*. Hitherto, one has paid more attention to the theoretical discussion of astrology than to the lore itself. See the voluminous work written by Eugenio Garin, *Lo zodiaco della vita*. For an informative survey of the discussion see Ludwig, *Zukunftsvoraussagen in der Antike*, pp. 50–56 = 169–176.

¹⁸³ See Vanden Broecke, *The Limits of Influence*, p. 259.

¹⁸⁴ The astrological lore had been discussed already among Arabic scholars.

¹⁸⁵ Girolamo Savonarola, *Opera singulare contra l'astrologia divinatrice* (Venice: 1536).

¹⁸⁶ Ioannis Francisci Pici Mirandulae [...] *Examen Vanitatis Doctrinae Gentium, Et veritatis Christianae Disciplinae: Distinctum in Libros sex* ([sine loco] 1520).

¹⁸⁷ See Ingetraut Ludolphy, "Luther und die Astrologie," in Paola Zambelli, ed., "Astrologi hallucinati". *Stars and the End of the World in Luther's Time* (Berlin – New York: 1986), pp. 101–107. Luther touched upon astrology only en passant: Stephan Rodt, *Die Weissagung Joh. Lichtenbergers [Prognosticatio, 1488], deutsch zugericht mit vleys, sampt einer nutzlichen Vorrede und Unterricht D. Martini Luthers* (Wittenberg: 1527), critical edition in: *Martin Luthers Werke, Kritische Gesamtausgabe*, vol. 23 (Weimar: 1901), pp. 7–12; compare Martin Brecht, *Martin Luther II* (Stuttgart: 1986), pp. 192f.; Martin Treu, "'Heillos und schäbig'. Martin Luthers Verhältnis zur Astrologie," in *Melanchthons Astrologie*, pp. 49–50.

Calvin,¹⁸⁸ Erasmus¹⁸⁹ and many other scholars. On the other hand, astrology was defended by Lucio Bellanti, professor of medicine and astrology at Siena, who was proud of having accurately predicted Pico's death to him before age 33¹⁹⁰ in his *Liber de astrologica veritate*.¹⁹¹ Among the defenders we must also include the previously mentioned poet Pontano and his *De rebus coelestibus*,¹⁹² as well as Jakob Schonheitz with his passionate polemic, *Apologia astrologiae*,¹⁹³ Agrippa von Nettesheim and his youthful writing *De occulta philosophia*,¹⁹⁴ Girolamo Cardano,¹⁹⁵ Johann Schoener with his great manual *De iudiciis nativitatum*,¹⁹⁶ Melanchthon¹⁹⁷ and his pupil Hieronymus Wolf and the dialogue *Admonitio de Astrologiae usu*¹⁹⁸ (both also important editors of Greek astrological texts), Heinrich Rantzau with his *Tractatus astrologicus*,¹⁹⁹ and finally, writing in the 17th century, Antonio Francesco Bonatti,²⁰⁰ and Jean-Baptiste Morin de Villefranche and his voluminous *Astrologia Gallica*.²⁰¹

The arguments against astrology²⁰² mostly centered on the problem of free will, that was generally discussed in religious disputations, and remains

¹⁸⁸ Jean Calvin, *Traité ou Avertissement contre l'astrologie qu'on appelle judiciaire et autres curiosités qui règnent aujourd'hui au monde* (Geneva: 1549), and at the same time *Admonitio Ioannis Calvini Adversus Astrologiam, Quam Iudiciariam Vocant, e Gallico sermone in latinum conversa* (Geneva: 1549).

¹⁸⁹ See Heinz-Günter Nesselrath, "Erasmus und die Astrologie," in *Zukunftsvoraussagen in der Renaissance*, pp. 293–308.

¹⁹⁰ See Knappich, *Geschichte der Astrologie*, p. 228.

¹⁹¹ *Lucius Bellantius Senensis physici Liber de astrologica veritate: et in disputationes Ioannis Pici adversus astrologos responsiones* (Florence: 1498 and Venice: 1502 and Basel: 1554). See Vanden Broecke, *The Limits of Influence*, pp. 24–27.

¹⁹² Giovanni Gioviano Pontano, *De rebus coelestibus libri XIII*. The first part came out in 1475–1477, the second after Pico's *Confutatio* 1494–1495, and, despite being unfinished, was printed in the year of his death, Basle 1503, then Venice 1519, Basle 1530 and 1566. In particular, he argues against the confutation of astrology in book XII, which was added later.

¹⁹³ Jakob Schonheitz, *Apologia astrologiae* (Nuremberg: 1502).

¹⁹⁴ Agrippa von Nettesheim, *De occulta philosophia libri tres* (Lyons: 1510, Antwerp: 1531).

¹⁹⁵ See above n. 14.

¹⁹⁶ Johannes Schöner, *De iudiciis nativitatum libri tres, item Praefatio Philippi Melanthonis* (Nuremberg: 1545).

¹⁹⁷ See Stefano Caroti, "Melanchthon's Astrology," in *"Astrologi hallucinati"*, pp. 109–121.

¹⁹⁸ Hieronymus Wolf, *Admonitio de Astrologiae usu*, printed secundo loco after Cyprianus Leovitius, *Ephemeridum novum opus* (Augsburg: 1557).

¹⁹⁹ On Rantzau see above n. 48.

²⁰⁰ Antonio Francesco Bonatti, *Universa astrosophia in tres divisa libros* (Padua: 1687).

²⁰¹ Johannes Baptista Morinus, *Astrologia Gallica principiis et rationibus propriis stabilita atque in XXVI libros distributa* (The Hague: 1661).

²⁰² Collected by Anthony A. Long, "Astrology: Arguments Pro and Contra," in *Science and Speculation*, ed. Jonathan Barnes (Cambridge: 1982), pp. 165–192; Josèphe-Henriette Abry, "Manilius et Julius Firmicus Maternus," in *Imago Antiquitatis* (Paris: 1999), pp. 35–45; in particular p. 42 with note 24.

unresolved up to our times: on the one hand our actions are determined by our social environment as well as by our mental disposition, on the other hand, a consistent determinism would suppress any kind of moral responsibility. The adversaries repeated objections uttered since the ancient skeptics: the rivalry between conception and birth for the rightful starting point of a nativity, the difficulty of discovering the moment of conception, the phenomenon of twins born in the same moment but with different destinies, and, contrariwise, sudden catastrophes simultaneously annihilating masses of victims with different nativities.

The believers, however, constantly appealed to prognostications that actually had been fulfilled. If predictions did not happen, this was imputed to the failure of calculation and the inability of astrologers. Other thinkers like Agrippa von Nettesheim sought a compromise distinguishing between “effectuating” (ποιεῖν) and slight “suggesting” (σημαίνειν)²⁰³ hinting at the famous formula *astra inclinant, non necessitant*, “the stars signify only a certain tendency, without forcing any causal nexus,” but this was by no means convincing.

Despite the great enthusiasm for astrology and similar trends throughout the 15th and at the beginning of the 16th centuries, in the last decades of the 16th century the mentality changed in the direction of realism. One reason may have been the misuse of astrology by charlatans—as well as the ill effects of fraud, greed, and political instrumentalization. As early as 1327 Cecco d’Ascoli was publicly burned in Florence for having cast the horoscope of Jesus and for other wrongdoing. He was followed by Savonarola and Giordano Bruno, among other things also for having favored astrology. Others were merely incarcerated like Cardano, another who had calculated the horoscope of Jesus.

In 1563, astrology was forbidden by the Tridentine Council. Since this verdict was only observed half-heartedly, Pope Sixtus V in 1586 promulgated the bull *Coeli et terrae* against astrology, confirmed once more by Urban VIII in the 17th century. Further prohibitions were needed. In England, the lore was forbidden by the Tudors. Eventually, an exact astronomical science began to exert itself. The two branches of celestial science that hitherto had not been completely distinguished, that is, the observation and explanation of the celestial movements on the one hand, and superstitious fortune-telling on the other, went their own ways. People who

²⁰³ Since Plotin. Enn. 2,3: (περὶ τοῦ εἰ ποιεῖ τὰ ἄστρον), § 7 ἀλλ’ εἰ σημαίνουσιν οὗτοι τὰ ἐσόμενα, [...], τί ἂν τὸ ποιοῦν εἴη; Cfr. Aug. civ. 5,1, CCL 47, 129, 39 *quod si dicuntur stellae significare potius ista quam facere*.

wanted to preserve the traditional unity pursued a reform of the *astrologia iudiciaria*, but nevertheless the empirical science prevailed, and only this came to be recognized as serious. From the 16th century onwards to the 18th century, large church halls, especially those few that pointed southwards were chosen, in order to install expansive meridians (“heliometers”) in the floor for exact time measurement.²⁰⁴ Thus Toscanelli and Egnazio Danti installed one such instrument in the northern transept of the Florentine cathedral, whereas Egnazio alone built one in the Dominican church of Santa Maria Novella that at that time had been recently reconstructed, and again in the huge south-facing church of San Petronio in Bologna, and this latter was later improved by Giandomenico Cassini. Francesco Bianchini built one in Rome and so likewise, in Palermo, did Giuseppe Piazzi—the discoverer, on New Year’s Eve in 1801, of the first asteroid.

Attempts were made to simplify the highly sophisticated Ptolemaic system of epicycles, which was understood only with difficulty. This system, by the way, is not entirely “wrong,” since the sun is not in fact immobile and is far from being the center of the universe; but the system was too complicated because one has to add to all motions of the celestial bodies the two motions of the earth. Girolamo Fracastoro, a professor of medicine and logic in Padua now better known for his medical didactic poem *Syphilis* (1530),²⁰⁵ tried to replace all Ptolemaic epicycles and all eccentric movements by homocentric spheres on the equator turning around a central earth.²⁰⁶ Copernicus held back his new heliocentric theory, writing it down only in a preliminary sketch, the *Commentariolus* (printed only in the 19th century),²⁰⁷ until Georg Joachim Rheticus and Osiander began, as late as in 1540, to publish his principal work *De revolutionibus*.²⁰⁸

²⁰⁴ See John Lewis Heilbron, *The Sun in the Church. Cathedrals as Solar Observatories* (Cambridge, Mass. – London: 1999, reprinted 2000 and 2001).

²⁰⁵ Ed. Geoffrey Eatough (Liverpool: 1984); with German translation by Georg Wöhrle, *Lehrgedicht über die Syphilis* (Bamberg: 1988, 1993²).

²⁰⁶ *Hieronymi Fracastori Homocentrica* (Venice: 1538), see Marie Boas, *The Scientific Renaissance 1450–1630* (London: 1962), p. 75f.

²⁰⁷ *Nicolai Copernici De hypothesibus motuum coelestium a se constitutis commentariolus* [1512], edited on the basis of the manuscript by Arvid Lindhagen (Stockholm: 1881).

²⁰⁸ *Ad Clarissimum Virum D. Ioannem Schonerum De libris Revolutionum [...] Reverendi D. Doctoris Nicolai Copernici Torunnaei [...] per quendam Iuvenem, Mathematicae studiosum* [Georgius Joachimus Rhetius] *Narratio prima* (Gdansk: 1540). See Boas, *The Scientific Renaissance*, pp. 68–89. On the complicated history of this edition see Noel M. Swerdlow, “On Establishing the Text of *De revolutionibus*,” *Journal for the History of Astronomy* 12 (1981): 35–46; Id. and Otto Neugebauer, *Mathematical astronomy in Copernicus’ “De revolutionibus”* (New York: 1984). Anthony Grafton, “Editing Technical Neo-Latin Texts:

The final version was published in 1543 with a preface by Osiander²⁰⁹ and dedicated to Pope Paul III, a believer in astrology. The new view of the universe was accepted only with reluctance.²¹⁰ The slow rate of success may be compared with the invention of the letterpress, which likewise became standard only after a long period of transition.²¹¹ The Church did not condemn this work, albeit it refuted the main heliocentric thesis—on the contrary: the work was used for the Gregorian reform of the calendar. For a long time, the Jesuits adhered to the geo-heliocentric compromise invented by Tycho Brahe, the so-called “Tychonic system” (see Fig. 1.8), according to which indeed all the planets turned around the sun, but the earth with its moon remained in the middle of the universe.

Today we are inclined to misinterpret the Copernican title *De revolutionibus orbium caelestium*, interpreting the astronomical term of “revolving” in the sense of an incisive scientific “revolution”,²¹² and especially in the last years this metaphor has undergone—in the scientific or cultural meaning—a mere inflation,²¹³ but Copernicus himself was by no means a revolutionary.²¹⁴ He had developed ancient theories, even if he was not personally acquainted with the heliocentric theory of his predecessor Aristarchos from Samos, unknown to that period. He followed Pythagorean ideas, especially those of Heraclides Ponticus and Philolaos, the latter being transmitted mainly by Plutarchus.

Two Cases and their Implications,” in *Editing Greek and Latin Texts. Papers given at the Twenty-Third Annual Conference on Editorial problems, University of Toronto 6–7 November 1987*, ed. John N. Grant (New York: 1989), pp. 163–186.

²⁰⁹ Nicolai Copernici Torinensis *De revolutionibus orbium caelestium libri sex* [...] (Nuremberg: 1543).

²¹⁰ Klaus Bergdolt, *Zwischen “scientia” und “studia humanitatis”. Die Versöhnung von Medizin und Humanismus um 1500*, Nordrhein-Westfälische Akademie der Wissenschaften. Geisteswissenschaften. Vorträge G 379 (Wiesbaden: 2001), p. 6 with n. 8, offers some studies that refute the hypothesis of a too incisive methodical turning-point.

²¹¹ See Wolfgang Augustyn, “Zur Gleichzeitigkeit von Handschrift und Buchdruck in Deutschland. Versuch einer Skizze aus kunsthistorischer Sicht,” in *Die Gleichzeitigkeit von Handschrift und Buchdruck*, ed. Gerd Dicke and Klaus Grubmüller, Wolfenbütteler Mittelalter-Studien, 16 (Wiesbaden: 2003), pp. 5–47.

²¹² Thomas S. Kuhn, *The Copernican Revolution* (Cambridge, Mass.: 1957). Alexandre Koyré, *La révolution astronomique* (Paris: 1961). Compare in a larger sense the “revolutionism” in Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: 1962).

²¹³ Some examples in Hübner, “Astrologie in der Renaissance,” p. 259.

²¹⁴ Boas, *The Scientific Renaissance*, p. 68, it is true, entitles her third chapter “The Copernican Revolution,” but she does her best to restrain any revolutionary idea (69): “This is not a revolutionary attitude; indeed Copernicus never intended it to be.” (70) “Certainly there was nothing in his education to prepare him for a revolutionary role . . .,” “in his own eyes, Copernicus was not revolutionising astronomy.”

DE COMETA ANNI 1577. 129
NOVA MYNDANI SYSTEMATIS HYPOTHEOSIS
ab Authore nuper adinuenta, quæ tum vetus illa Ptolemai-
ca redundantia & inconcinuitas, tum etiam recens Coper-
niana in motu Terræ Physica absurditas, exclu-
duntur, omniaq; Apparentius Cælestibus
aptissimè correspondent.

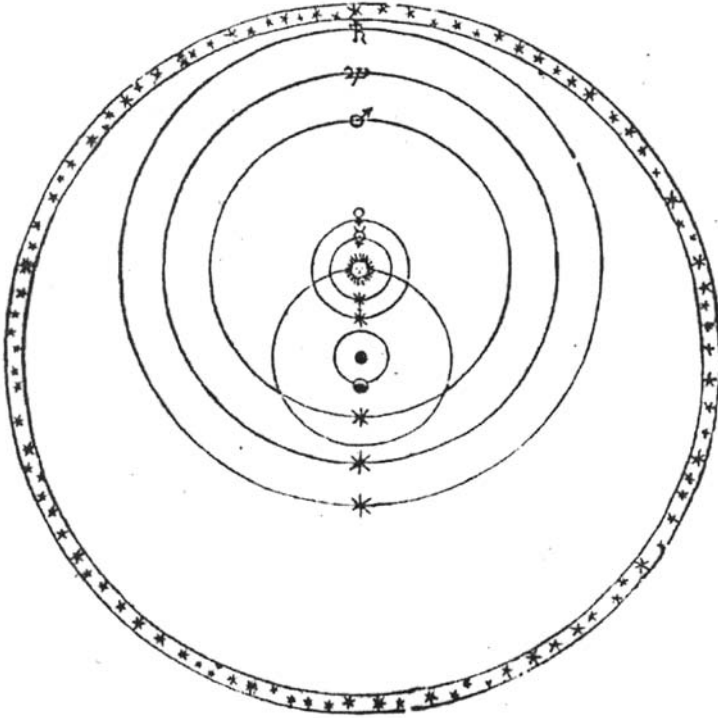


Fig. 1.8: The Tychonic system

From the general celestial science including judicial astrology, the development toward the predomination of the exact science can be summed up by referring to three eminent personalities:²¹⁵ Heinrich Rantzau (1526–1598) was still a pure believer, Johannes Kepler (1571–1630), in his *Tertius*

²¹⁵ Friederike Broockmann, Paolo Passoti, Daniel A. Di Liscia and Günther Oestmann: "‘Nicht das Kindt mit dem Badt außschütten,’ Zur Rolle einer Pseudowissenschaft im Zeitalter der wissenschaftlichen Revolution: Die Astrologie bei Johannes Kepler, Heinrich Rantzau und Galileo Galilei," *Akademie Aktuell. Zeitschrift der Bayerischen Akademie der Wissenschaften* 4 (2008): 51–60.

intervenians (1609) tried to reconcile science and belief,²¹⁶ and Galileo Galilei (1564–1642) refuted all prognostication, but nevertheless cast horoscopes for money, and he integrated the four moons of Jupiter that he had discovered in 1610²¹⁷ into the horoscopic diagram.

The Enlightenment really put an end to astrology. We have already seen that Saumaise in Leyden refuted astrology, in a work masterfully commented by his colleague Scaliger. A critical attitude was transferred from the contents of the lore to the textual transmission. So, for example, Richard Bentley, in 1739, deleted no less than 171 lines from Manilius' *Astronomica*, roughly 4% of the entire work,²¹⁸ and such work continued in the famous edition prepared by Alfred Edward Housman (1903–1930).²¹⁹ Inspired by Counter Reformation zeal, the Augsburg lawyer Julius Schiller S.J., with the collaboration of his colleague Johannes Bayer, author of the famous *Uranometria*,²²⁰ rebaptized the pagan celestial sphere in 1627, constellation by constellation, and even star by star, using Christian nomenclature. The innovation, it is true, was only sporadically successful.²²¹

The Enlightenment expelled astrology so radically from universities and from life in general that the Romantics, although sympathetic to the astrological mentality, found nothing left there to grasp.²²² Historical research since the end of the 19th century has assumed the burden of rediscovering that long-hidden texts and Renaissance authors can help restore and explain the different systems of that obscure, but fascinating lore.²²³

²¹⁶ On the origin of this writing see Johannes Kepler, *Warnung an die Gegner der Astrologie. "Tertius Intervenians," mit Einführung, Erläuterungen und Glossar* ed. Fritz Krafft (Munich: 1971), p. 11f.

²¹⁷ They were called according to the pagan mythology and Jupiter's love-affairs: Calisto, Io, Europa, and Ganymede (the greatest). See Hübner, "Antike in der Astrologie der Gegenwart," pp. 111f.

²¹⁸ *M. Manilii astronomicon ex recensione et cum notis Richardi Bentleii* (London: 1739) edited by his homonymous nephew. Against this hypercritical edition, Friedrich Jacob directed his own edition: *M. Manili astronomicon libri quinque recensuit Fridericus Jacob* (Berlin: 1846). See Hübner, ed., Manilius, *Astronomica*, book V, I pp. 64–70.

²¹⁹ See Hübner, "Manilius als Astrologe und Dichter," p. 130; Id., rec. Manilius, *Astronomica* ed., trad. G.P. Goold, *Gnomon* 52 (1980): 11–15.

²²⁰ Johannes Bayer, *Uranometria omnium asterismorum continens schemata, nova methodo delineata, aereis laminis expressa* (Augsburg: 1603).

²²¹ Julius Schiller, *Coelum stellatum christianum [...] sociali opera Johannis Bayeri [...]* (Augsburg: 1627), see Hübner, *Zodiacus Christianus*, pp. 12; 15f.; 52–54.

²²² See Wolfgang Hübner, "L'astrologie dans l'antiquité," in *Astres, astrologie, religions astrales dans l'antiquité*, special number of *Pallas* 30 (1983), pp. 1–24, in particular p. 4f.

²²³ The pioneers were Hermann Usener (1834–1905), Franz Boll (1867–1924) in Germany, and the Belgian Franz Cumont (1868–1947); compare Ludwig, *Zukunftsvoraussagen der Antike*, p. 63f.

CHAPTER TWO

REPRESENTATION OF THE SKIES AND THE ASTROLOGICAL CHART

Giuseppe Bezza

In Medieval and Renaissance astrology, the sky at any given moment in time is commonly represented by a figure made up of three squares, inscribed one within the other. In the central square are written the name (of the person in the case of the birth of a human being, or of the event in the case of a chart regarding the world, or an election, say, or an interrogation), along with the date, the hour and the place. The twelve equilateral triangles which circumscribe the central square divide the diurnal apparent motion of celestial bodies around the Earth into twelve parts (Figure 2.1). These are the houses, (*domus*); and each, within a given period, has its own particular force and quality. First come the four houses at the angles, whose bases face the internal square. They have their beginning along the lines of the horizon and the meridian: the first house starts from the eastern side, the seventh, from the west, the tenth from the upper meridian, the fourth from the lower meridian. These are followed by the ninth, fifth, eleventh and third houses, with a lesser degree of force, whose bases face the higher and lower parts of the external square. The four remaining houses are the weakest. The relative value of the houses depends, for the most part, on the theory of aspects, *adspectus* or *radiationes*. Thus we read in the *Introduction to the Tetrabiblos* attributed to Porphyry: “Seven are the rays of each celestial body: three are sent from above, and go to the right; three are sent from below and go to the left, one is sent along the line of the diameter.”¹ (Figure 2.2.) The aspects are angular distances: 180 degrees for opposition, 120 for the triangle, 90 for the square, 60 for the sextile or hexagon. However, the origin should not be sought in geometry, but in musical intervals.² Of the twelve houses, the first constitutes the beginning and signifies life; and that which belongs to life must necessarily be in relation with life; therefore the aspects, insofar as they transmit

¹ *Catalogus Codicum Astrologorum Græcorum*, Vol. 4 (Brussels: 1940), 198, 19–21.

² See Ptolemy, *Tetrabiblos* I, 9; I. Düring, *Die Harmonielehre des Claudios Ptolemaios* (Göteborg: 1932), 101ff.; Jon Solomon, *Ptolemy Harmonics, translation and commentary* (Leiden – Boston – Köln: 2000), 154ff.

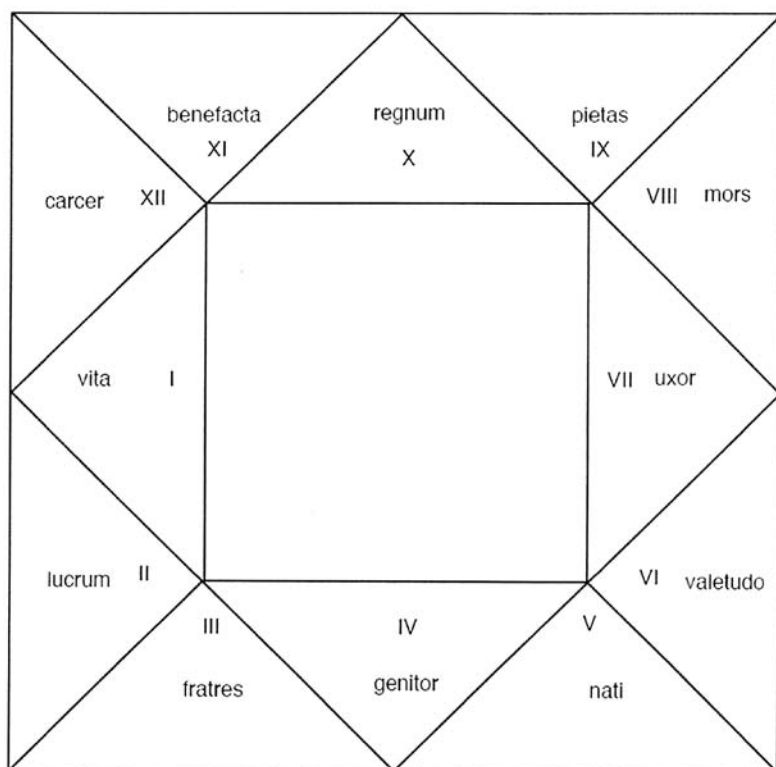


Fig. 2.1: Triple square astrological chart

musical consonances, produce a relation. It follows that the second, sixth, eighth and twelfth houses are weak because *inconiuncta*, that is to say, they do not form an aspect at the rising degree, the horoscope.

The graphic representation of the *thema coeli* (astral chart) in Figure 2.1 is modelled on the diurnal motion of the celestial bodies, be they planets or fixed stars: they rise in the East, passing through the first house, culminating in the tenth, and then setting in the seventh, with their anticulmination in the fourth. In their rotation, the celestial bodies do not go through the zodiac, but are transported from the *primum mobile* along parallel lines to the equator. The rotation thus follows an ideal and imaginary circle: different for each celestial body, as each of these designates a distinct trajectory, in time and space, for the whole duration of its *sidereal* revolution. These motions are measurable however: it is the equinoctial line, the celestial equator, which constitutes the unit of measurement. We have here a representation that emphasizes the fastest motion of the

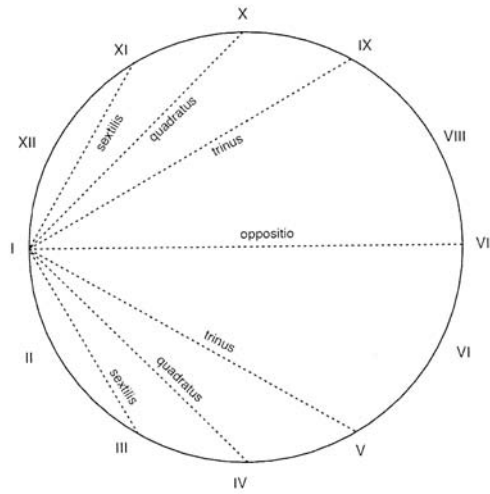


Fig. 2.2: Theory of aspects

sky: astrology distributed the houses and their qualities not based on the actual motion of the celestial bodies along the zodiac, but on the motion of the *primum mobile*. The signs and the degrees of the zodiac were then registered along the initial line of each house inside which were placed the planets present in it, the lunar nodes, the lots, and everything else considered to be necessary for the description of the figure: a syzygy, the stars, a bolide, an eclipse, a comet. The origin of this graphic representation must be sought in Byzantine manuscripts, but the medieval astrologer transformed it from the square figures which appear in the Arabic texts, after having changed its orientation: for while the Arab astrologer placed the East above, the medieval astrologer places there the South.³

The first step the astrologer took consisted in calculating the *medium cæli*, i.e., the culminating zodiacal degree. Ptolemy noted that the most precise way to determine that moment in time is by means of a horoscopic astrolabe,⁴ which, presumably, corresponded to what we now call a graduated quadrant or sextant, with which to establish the height

³ The idea of F. von Oefele ["Sun, Moon, and Stars. Introductory," in: J. Hastings, *Encyclopædia of Religion and Ethics*, vol. 11 (Edinburgh: 1921), pp. 54–56] which presents the square figure as related to the Egyptian representation of the sky is suggestive but fanciful.

⁴ *Quadripartitum*, III, 2.

of a conspicuous star.⁵ There is evidence of the use of this method in medieval astrology.⁶ However, the method can be used only when the astrologer is present at the event which he must represent. If not, the report is entrusted to a witness who will have registered the time with a mechanical clock. Renaissance horoscopes registered civic time in two different ways: either they followed the usage of Italic hours, which began at sunset and gave the following indications: *horologii, ab occasu solis, N.S.*, i.e. *nocte sequenti*; or they followed the Nuremberg usage, which counted the hours from the rising of the sun: *ab ortu solis, post solis ortum* or again *ante solis ortum*. Civic time had subsequently to be converted into astronomical time, whereby the hours were counted starting from midday. A further two corrections were made. The first was the *aequatio temporis* due to the unequal speed of the apparent motion of the sun along the ecliptic and from the inclination of the ecliptic with respect to the equator. The second correction was due to the longitudinal distance of the given place with respect to the place for which the ephemerides were calculated. All these corrections provided the *tempus astronomicum aequatum*.

With this result, the astrologer proceeded more or less as described by Ptolemy.⁷ Multiplying by 15, the *tempus astronomicum aequatum* was converted into equatorial degrees, to which was added the right ascension of the sun at that moment. In this manner, one obtains the right ascension of the culminating degree. Then adding 90 degrees, that is, the equatorial semi-circle, one obtains the oblique ascension of the eastern degree, or horoscope. Thus for the geniture of Cardano, here below (Figure 2.3), the notation hour 6:40 *p.m.*, *post meridiem*, must be plausibly understood as *tempus astronomicum aequatum*. Let us therefore convert the time in equatorial degrees ($6:40 \times 15$) to obtain 100 degrees. Let us determine the place of the sun at longitude $10^{\circ}37'$ from the sign of Libra and look for its right ascension: $189^{\circ}45'$. The sum of these makes $289^{\circ}45'$ which shall be the right ascension of the culmination point or *medium coeli* to which corresponds Capricorn $18^{\circ}15'$. If we further add the equatorial semi-circle to the right ascension of the culmination point, we obtain ($289^{\circ}45' +$

⁵ See A. Perlach, *Commentaria Ephemeridum Clarissimi viri D. Andreae Perlachii...*, (Vienna: 1551), folios 66r: "Deprehenditur autem tale tempus per instrumenta astronomica, puta astrolabium, quadrantem et alia, similiter ex horologiis sciotericis sive umbrarum."

⁶ See Antonio da Montulmo, *De iudicijs nativitatum liber praeclarissimus* (Nuremberg: 1540), folio B2v: who, on the 26th July 1396 in Florence, after sunset, establishes the culminating degree at Sagittarius 13° , having beforehand determined the height above the horizon (at 72° ; $20'$) of the brightest star of the Lyre.

⁷ See *Almagestum* II, 9. Similar, but not identical: Ptolemy makes use of temporal hours spent since sunset or after sunrise.

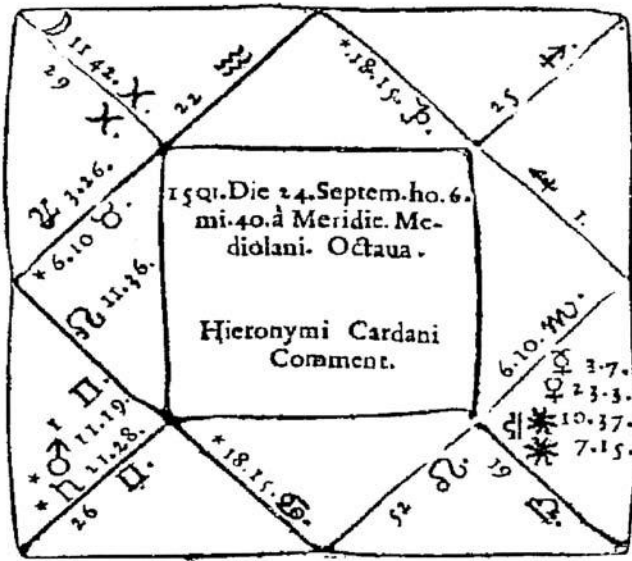


Fig. 2.3: Nativity of Girolamo Cardano

$90^\circ = 379^\circ 45' - 360^\circ = 19^\circ 45'$, the oblique ascension of the horoscope. In his own astral theme, Cardano placed the degree of the horoscope at Taurus $6^\circ 10'$ which, in the Renaissance tables of Regiomontanus,⁸ correspond to a geographic latitude of $45^\circ 12'$, which is rather close to that of Pavia.⁹

Once the four angles of the chart were established, the astrologer moved on to determine the cusps of the twelve houses. This procedure, known as *aequatio domorum*, was given a number of solutions over the centuries. The 19th century Italian novelist Alessandro Manzoni, in a story set in the 17th century, explains how don Ferrante, for the sake of pure obstinacy, defended Cardano's method of domification against another erudite fiercely devoted to the method of Alcabitus.¹⁰ But Cardano himself, who had welcomed in his youth the *modus aequalis* of Firmicus Maternus, later acknowledged that the most natural and most responsive to experiments, indeed, the mathematically correct one, was instead the method of Alcabitus,¹¹ i.e., the one used by Regiomontanus; and he

⁸ *Tabulae directionum projectionumque, non tam astrologiae iudicariae, quam tabulis instrumentisque innumeris fabricandis utiles ac necessariae* (Nuremberg: 1475). Also no. 36.

⁹ Be this at it may, Cardano's calculation are made for a latitude of $44^\circ 20'$, cf: *In Claudii Ptolemaei Pelusiensis libri quatuor De astrorum iudicijs cum expositione Hieronymi Cardani*, in: *Opera*, vol. 5 (Leyden: 1663), 167b.

¹⁰ *I Promessi sposi* (English translation: *The Betrothed*), chap. 27.

¹¹ *In Claudii Ptolemaei Pelusiensis libri quatuor De astrorum iudicijs*, 167b.

concluded ultimately, in his commentary to the last chapter of the last book of the Ptolemaic *Tetrabiblos*: “quod hæc est difficultas maxima in tota astrologia.”¹² Juan de Rojas could thus sharply comment: “quot homines, tot sententiae.”¹³ However, these maxims, all well-known to Renaissance astrologers, are seven in all. Placido Titi, in the middle of the 17th century, presents them in a clear and concise form:

So many, so diverse and dissonant one from another, are the opinions among the professors of the art, that to present them is a difficult and aggravating task. Let it be granted us, nevertheless, to spend some words, with the aim of grasping the innermost truth of the question.

1. Some divide the circle of the signs into twelve equal parts by means of circles passing through the poles of the zodiac. Of these circles, the first goes through the point of the degree of the ecliptic which rises in the East.
2. Others divide in the same manner the parallel line to the equator which passes through the ecliptic degree which rises, describing circles guided through the poles of the world.
3. Others divide in equal parts the portion of the zodiac comprised between two contiguous angles.
4. Others determine the cusps of the houses by means of doubled temporal hours accounted for in the zodiac such that the zodiacal degree which is at a two hour distance from the horizon can be said to be in the twelfth house, the degree which is at four hours' distance is thus in the eleventh house, and so on and so forth. Subsequently, circles are described, from these points, which pass through the points of intersection of the horizon and the meridian. What the basis for these circles of positions may be, I confess, I do not understand.
5. Still others divide the equator by drawing circles which pass through the intersections of the meridian with the horizon; and this is the generally accepted opinion nowadays.
6. Others divide the vertical circle which passes through the points of the rising and setting of the equator by means of circles which pass through the intersections of the horizon and the meridian.
7. Others finally divide the intervals between the angles by means of double temporal hours, which is what Ptolemy seems to have handed down to us.

So much for the clash of the various opinions.¹⁴

¹² Ibid., 368b.

¹³ *Commentariorum in astrolabium, quod planispherium vocant, libri sex*, Lutetiae 1551, 130.

¹⁴ See *Physiomatica sive Cœlestis Philosophia naturalibus hucusque desideratis ostensa principijs* (Milan: 1675), II, 7, 174.

We may compare these seven modes with those accounted for by J.D. North in his history of astrology.¹⁵ The first corresponds to his number 6, and has no testimony among the Arabs.¹⁶ It is designated as the *modus aequalis*, and during the 16th century was attributed to Firmicus Maternus.¹⁷ The second is North's number 5, also not attested in the Arabic sources. The third is North's number 2, ascribed in the Renaissance to Porphyry,¹⁸ but attested in a 5th century AD horoscope ascribed both to Eutocius and Julian of Laodicea.¹⁹ The method is moreover present in our Arab sources. The fourth is North's number 1 and is the most widely documented method in Arab sources. In the Middle Ages and the Renaissance, it was ascribed to Alcabitius, but the oldest testimony is to be found in Rhetorius.²⁰ The fifth is North's number 4 and corresponds to Regiomontanus' method. During the Renaissance, many saw Ibn Ezra as Regiomontanus' source here, but the first testimony in the Arab world is found in Ibn Mu'ādh al-Jayyānī (i.e. from the city of Jaen), active in Andalusia during the 11th century.²¹ The sixth corresponds to the method attributed to Campanus of Novara, widespread in Iran and central Asia from the 11th century onwards, that is, from the time of al-Bīrūnī who declares it to be his preferred method.²² The seventh is North's number zero, not attested among the Arabs, but sometimes described in treatises about the astrolabe, given that the houses are determined by the intersection of the ecliptic with the curves of the unequal and odd hours.²³

¹⁵ *Horoscopes and History* (London: 1986), see in particular pp. 46–47.

¹⁶ See E.S. Kennedy, "The Astrological Houses as Defined by Medieval Islamic Astronomers," in: J. Casulleras, J. Samsó, eds., *From Baghdad to Barcelona: Studies in the Islamic Exact Sciences in Honour of Professor Juan Vernet* (Barcelona: 1996), pp. 535–578.

¹⁷ This method, Ilario Altobelli affirms, in *Tabulae Regiae divisionum duodecim partium caeli, et syderum obviationum, ad mentem Ptolemæi* (Macerata: 1628), 32: "probatum a nemine inveni, nisi a Cardano per aliquod tempus."

¹⁸ See I. Altobelli, *Tabulae Regiae divisionum duodecim partium caeli*, pp. 37–38.

¹⁹ O. Neugebauer, H.B. van Hoesen, *Greek Horoscopes* (Philadelphia: 1959), pp. 152–157.

²⁰ See *Catalogus Codicum Astrologorum Graecorum*, vol. 8, n. 4 (Brussels: 1929), pp. 221–223.

²¹ See I. Altobelli, *Tabulae Regiae divisionum duodecim partium caeli*, 41: "Porro Monteregeus assumpsit modum dividendi domos, ut quidam dicunt ab Abraham Abenesre, sed Alphonsus Rex libro secundo Armillarum cap. 42 dicit fuisse modum derivatum ab antiquissimo Aben Mohab."

²² See al-Bīrūnī, *Kitāb maqālīd 'ilm al-hay'a. La trigonométrie sphérique chez les Arabes de l'Est à la fin du X^e siècle*, ed. and tr. M.T. Debarnot (Damascus: 1985), p. 284.

²³ See I. Altobelli, *op. cit.*, 24: "Et forsan veteres astronomi arabes, et Caldæi non utebantur tabulis domorum ad usum facilem redactis, sed astrolabijs, in quibus ducebant lineas horarum inaequalium pro domorum distinctione." This method appears indeed as the most simple thanks to the use of the astrolabe, but the most complicated from the point of view of mathematics. See J.D. North, *Horoscopes and History* (London: 1986), p. 21.

The Ephemerides and the Tables of the Primum Mobile

In the early Middle Ages, the cultural heritage of classical Antiquity was not available, and Greek was still unknown in the Carolingian schools. Moreover, exchanges with the East had become difficult after the Muslim conquests of the 7th century put a stop to Syrian trade in the Mediterranean. The first contact with Arab culture was made in Spain, especially with regard to astronomical science, towards the end of the 10th century, and in Salerno, a century later, in the field of medicine. From the 11th century onwards, the West began to assimilate the scientific knowledge of the Arabs, the first stage being marked by the acquisition of the astrolabe and its construction. The author of the *De utilitatibus astrolabij*, either Gerbert d'Aurillac or one of his students, observes that the astrolabe is useful in order to determine the hours of monastic prayer, and that the astrolabe is like "a fair judge, who does not allow for the smallest of errors."²⁴ The introduction of the astrolabe brought extremely rapid progress: while the astronomy of the Carolingian period had dealt, in general terms, with the circles of the celestial sphere and the positions of the stars within the constellations, now with the astrolabe, numerical data was provided which could be compared with observations. The following century witnessed the introduction of an astronomy that concerned the *primum mobile* and of the motions of the planets.

In the Latin Middle Ages, the first astronomical tables appeared during the first half of the 11th century, compiled by Adelard of Bath. Having been to Spain, driven by the desire to learn Arabic science, he edited a Latin version of the tables of al-Khwarizmi. These were followed, half a century later, by those produced by Petrus Alphonsi (Moses Sephardi), reputedly the physician of Henry I "the Lion of Justice," next by those of Walcher, prior of Malvern, of Robert of Chester, of Abraham bar Hiyya of Barcelona. Finally, the Toledan Tables appeared. All were based on Arabic canons and tables, either those of al-Khwarizmi or al-Battānī, or in the case of the Toledan Tables, those of al-Zarqālī. The Arab tables themselves had, as their model and prototype, the *Handy Tables* of Ptolemy, though they offered a mixture of Greek, Sassanid and Indian elements. The mixture of different elements is characteristic of the first period of Arab astronomy and can be found in the main tables of the beginning of the Latin Mid-

²⁴ See J.D. North, *Monasticism and the first mechanical clocks*, in: J.T. Fraser and N. Lawrence, eds., *The Study of Time* (New York: 1975), pp. 381–393.

dle Ages, in the tables of al-Khwarizmi, as in the *Tabulae Jahen*,²⁵ and in the Toledan Tables. The latter, for example, composed by al-Zarqali of Cordoba, follow al-Khwarizmi in determining the right ascensions and the equation of the Sun, the Moon and the five planets, al-Khwarizmi in determining the oblique ascensions, parallaxes, eclipses, Hermes in the *aequatio domorum*, and Thâbit ibn Qurra for the theory of trepidation. These tables were extraordinarily successful and many of those produced subsequently owed much to them, as the Tables of Raymond of Marseilles (ca. 1140) and perhaps also the *Tabulae Machlinienses* of Henry Bate of Malines, from the second half of the 13th century.²⁶ All these tables were finally substituted, during the first half of the 14th century, by the Alfonsine Tables which remained widely in use until Copernican times. Their extraordinary success depended, to a large extent, on the collection of canons, i.e. of explanations and instructions, which John of Saxony wrote around 1327, and also on the commentaries of Jean de Murs and Jean de Lignères.²⁷

It is possible to note certain differences between the astronomical tables. The Arabs, next to the term *zīj* which usually indicated treatises of spherical astronomy for the use of calculators and observers, used *qânûn*, from the Greek *kanôn*, in the sense of astronomy treatise, while *jadwal* ("stream, rivulet," and subsequently "section," or "chart set up in columns") designated astronomical tables in the strict sense. In contrast, in the Latin West, besides the primitive use of *Azīg* or *Ezich*, which is an adaptation from the Arabic *zīj*, we only find the term *tabula* which indicates a treatise in which are present the canons and the necessary parameters not only for astronomical calculations, but also for chronology and the calendar. All of the tables contain a certain number of canons which are uniquely relevant to astrological requirements.²⁸ These are normally

²⁵ *Liber tabularum Jahen cum regulis suis*, see F.J. Carmody, *Arabic Astronomical and Astrological Sciences in Latin Translation. A Critic Bibliography* (Berkeley and Los Angeles: 1956), p. 140. These tables, whose Arabic or Persian originals were composed by Ibn Mu'adh al-Jayyāni, i.e. Jaén, the capital of the eponymous Andalusian province.

²⁶ On Henry Bate see A. Birkenmajer, *Henri Bates de Malines, astronome et philosophe du XIII siècle*, in: A. Birkenmajer, *Etudes d'histoire des sciences et de la philosophie au Moyen Age* (Warsaw: 1970), pp. 105–115.

²⁷ See E. Poulle, *Les Tables Alphonsines avec les canons de Jean de Saxe. Edition, traduction et commentaire* (Paris: 1984). On the role played by French astronomers and on their dissemination, see J.D. North, "The Alfonsine Tables in England," *Prismata, Festschrift für Willy Hartner*, Y. Maeyama and W.G. Saltzer, eds. (Wiesbaden: 1977), pp. 169–301.

²⁸ For the Arabic astronomical tables, see E.S. Kennedy, *A Survey of Islamic Astronomical Tables*, *Transactions of American Philosophical Society*, NS 46, 2, 123–177; for the Medieval ones, E. Poulle, *Les sources astronomiques (textes, tables, instruments)* (Turnhout: 1981); R. Mercier, "Astronomical Tables in the Twelfth Century," in: Charles Burnett, ed., *Adelard*

located towards the end, almost as an appendix, not so much because they constituted a distinct section, but rather because astrological operations necessarily follow the calculations of the planetary positions.

But, with the passing of time, the part of the table pertaining to the canons of diurnal motion broke off to constitute an independent piece. At the beginning of the 14th century, John of Saxony explains that the astronomical tables, as a whole, comprise three distinct parts: the tables of the *primum mobile*, the canons regarding the equations of the planetary positions and the canons regarding the eclipses. This distinction can be found in the tables of his own master, Jean de Lignères. The separation of the tables of the *primum mobile* from the unitary astronomical body answers to the needs of practicality, but not only. In the three following centuries, separate editions of these tables were made. The reason is to be found, no doubt, in precise astrological requirements. For indeed, given that the astrologer expresses his future judgements according to the force of the motion of the sphere, appropriate tables of the diurnal motion enable him to execute these prognostications with ease, by merely reading the mathematical calculations of future configurations.

The tables are generally called *Tabulae primi mobilis*, but the most famous of them all, compiled by Regiomontanus, are called by a name reflecting their use, i.e., *Tabulae directionum*, given that the astrologer is able, by their means, to carry out the *directiones* of the significant stars and pronounce himself on the future. Of these tables, the most ancient seem to be those of al-Khwarizmi,²⁹ about one fifth of which are devoted to the *proiectio radiorum*. These tables, whose Arabic originals have been lost, must have had some success in the Arab world. For already Ibn Hibintâ who lived in Baghdad at the time of al-Khwarizmi, refers to them in his vast compilation *The Book About the Science of the Stars Which Makes All Others Superfluous*.³⁰ Throughout the Middle Ages, trigonometric calculations were made easier by the use of special instruments, the most important being the zarqâlliyya, (lamina of al-Zarqali), a form of

of Bath. *An English Scientist and Arabist of the Early Twelfth Century* (London: 1987), pp. 87–118.

²⁹ See the Latin edition of the text edited by Suter, *Die astronomischen Tafeln von Mu'ammad ibn Mûsâ al-Khwarizmi in der Bearbeitung des Maslama ibn Ahmed al-Madjriti und der latein Uebersetzung des Athelard von Bath* (Copenhagen: 1914); and the English edition with commentary by O. Neugebauer, *The Astronomical Tables of al-Khwarizmi* (Copenhagen: 1962).

³⁰ On *al-Mughnî fi ahkâm al-nujûm*, see J.P. Hogendijk, "The Mathematical Structure of Two Islamic Astrological Tables for 'Casting the Rays,'" *Centaurus*, n. 32 (1989): 173.

universal astrolabe, known in the Latin West as a *saphaea*.³¹ The description of the construction and the astrological usages of a *saphaea*, designated as *estrumento del levantamiento*, can be found in the Alfonsine *Book of Ataçir*.³² *Levantamiento* translates the Arabic *tasyîr*, i.e. the action of guiding towards, or making a star go in the direction (*levantar*, *sayyara*) of another.³³ Subsequently, Western astrologers came up with other very similar instruments, such as the *directorium*, another variant form of the universal astrolabe, invented, according to Simon de Phares, by Jean de Lignères.³⁴ There was also the *meteoroscopium* of Johannes Werner, a student of Regiomontanus, which derives directly from the *saphaea*.³⁵

From Greek astrological literature of late Antiquity until the Renaissance, the technique of *proiectio radiorum*, i.e., the calculation of the rays of the planets, remained essentially unchanged. The various methods are distinguished only by the different procedures used, all equally long and tedious. Their lack of uniformity and composite nature increased their complexity and helped guarantee to the medieval astrologer his distinguished position within the courts. But, at the end of the 15th century, the tables of Regiomontanus marked a huge step forward:³⁶ in order to calculate the rays of the stars it was now only necessary to know the oblique ascension or descension of the planet in the position of its circle. The tables, having made many steps easier, eliminating a large number of calculations by hand, especially together with the exclusive use of position circles, contributed to rendering obsolete the *proiectio radiorum* of the hourly motion or, to use a Medieval expression, *secundum equationem domorum*. The last text which presents this procedure is, to my knowledge, the *De radiis et aspectibus planetarum* by Matteo Guarimberti of Parma, written between the end of the 14th and beginning of the 15th century.³⁷

³¹ See the article *Shakkâziyya* by D.A. King in: *Encyclopédie de l'Islam* (nouvelle édition) (Leiden – Paris, 1977), vol. 7, pp. 259–260.

³² M. Rico y Sinobas, *Libros del Saber de Astronomía del Rey D. Alfonso X de Castilla* (Madrid: 1863–1867), vol. 2, pp. 295–309.

³³ This instrument was able to show both the direct *tasyîr* and the converse (*retornado*); see M. Viladrich and R. Martí, *Sobre el Libro dell Ataçir de los Libros del Saber de Astronomía de Alfonso X el Sabio*, in: J. Vernet (ed.), *Nuevos estudios sobre Astronomía española en el siglo de Alfonso X* (Barcelona: 1983), pp. 75–100.

³⁴ See E. Wickersheimer, *Recueil des plus célèbres astrologues et quelques hommes doctes fait par Symon de Phares* (Paris: 1929), p. 214.

³⁵ See J.D. North, "Werner, Apian, Blagrove and the Meteoroscope," *British Journal for the History of Science*, n. 3 (1966): 57–75.

³⁶ *Tabulae directionum projectionumque, non tam astrologiae iudiciariae, quam tabulis instrumentisque innumeris fabricandis utiles ac necessariae* (Nuremberg: 1475). Also no. 8.

³⁷ Printed in Nuremberg in 1535 in the wake of the *editio princeps* of the Ptolemaic *Quadripartitum* edited by Camerarius. A clear medieval treatment of this procedure can be

From the end of the 15th century, many editions of the tables of Regiomontanus were produced with commentaries and additions by Erasmus Reinhold,³⁸ Luca Gaurico,³⁹ and Cyprian Leowitz.⁴⁰ These came as substitutes for the numerous individual tables, specific to particular latitudes, which were being published in increasing numbers in the late Middle Ages, such as those by Johannes Angelus,⁴¹ the latest of the period, with their strikingly peculiar illustrations of the decans and each of the degrees of the zodiac, taken from the Alfonsine *Libro de las formas*.⁴² They give a table of the houses for each of the seven climates of Antiquity with the addition of an eighth climate for the mouth of the Rhine (53° latitude). They incorporate furthermore a series of tables and astrological definitions, for the time of gestation, the planetary domination over the months of pregnancy, a table of the planetary hours with their significations, a calendar of festivities, the images of the zodiac signs with their properties.

The actual contents of the *Tabulae primi mobilis*, before and after Regiomontanus, are therefore astronomical and astrological at the same time, in line with the rule for all introductions to the Ephemerides, from those by Stöffler to those by Magini and Argoli. As for the mathematical/

found in the chapter titled *De respectibus* of the treatise on the astrolabe by Abraham ibn Ezra, published by J.M. Millás Vallicrosa, "Un nuevo tratado de astrolabio de R. Abraham ibn 'Ezra," *Al-Andalus*, n. 5 (1940): 1–29.

³⁸ *Iohannis de Monte Regio mathematici clarissimi Tabulae directionum projectionumque totam rationem primi motus continentes et non tam astrologiae iudiciariae quam tabulis instrumentisque innumeris fabricandis utiles ac necessariae. Denuo nunc editae et pulchriore ordine dispositae multisque in locis emendatae. Eiusdem Regiomontani tabula sinuum per singula minuta extensa universam sphaericorum triangulorum scientiam complectens. Accesserunt his Tabulae ascensionum obliquarum a 60 gradu elevationis poli usque ad finem quadrantis per Erasmum Reinholdum Salveldensem supputatae* (Wittenberg: 1606). The Regiomontanus tables were also translated into French: *Tables des directions et projections corrigées et augmentées et leur usage* (Paris: 1626).

³⁹ *Clarissimi doctoris D. Joannis de Montereio Germani Tabulae directionum... per egregium doctorem d. Lucam Gauricum neapolitanum nuper Venetiis castigatae ac solerti calamo examinatae. Cum plerisque additionibus ac novis tabellis quin et Gaurici compendiolu* (Florence: 1524).

⁴⁰ *Tabulae positionum pro variis ac diversis poli elevationibus, ad directiones necessario pertinentes, summa fide, cura et diligentia supputatae, atque nunc primum in lucem editae* (Augsburg: 1551).

⁴¹ Johannes Angelus, *Astrolabium planum in tabulis ascendens continens qualibet hora atque minuto. Equationes domorum celi. Moram nati in utero matris cum quodam tractatu nativitatum utili et ornato. Necnon horas inequales pro quolibet climati mundi* (Augsburg: 1488).

⁴² See Alfonso X el Sabio, *Astromagia*, ed. A. D'Agostino (Naples: 1992), pp. 98–127; 345–366.

astronomical part, it contains a series of charts which facilitate carrying out all the operations that can be performed with the aid of the astrolabe or the solid sphere: finding the duration of the unequal hours of the day and night throughout the seasons and according to the geographical latitude, finding the time of the rising and setting of the Sun, the cosmic and apparent rising and setting of the stars, determining the partition of the signs of the zodiac during the diurnal motion or, as is usually said, the domification. There are in addition, trigonometric tables of declination, of right ascensions, ascensional differences, oblique ascensions for various terrestrial latitudes. They also usually offer tables with geographical coordinates, of the equation of time, of multiplications in a sexagesimal numeral system. After Regiomontanus, the author who most extensively discussed the canons concerning the diurnal motion was Giovanni Antonio Magini; and his enormous and extraordinary work on the *primum mobile*⁴³ can be considered as the most exhaustive treatment of spherical astronomy of the pre-algebraic period.⁴⁴ Towards the end of his life, Magini had set about organizing systematically the various canons concerning the art of directions. The book was published posthumously the year after his death.⁴⁵ The following year, Alfonso Zoboli undertook the publication, in an in-folio volume, of a series of *tabulae directoriae* in the spirit of the master, limited to only two geographical latitudes (42° and 45°).⁴⁶ Had he carried out the enterprise for all the latitudes, the work would have run to some three thousand pages.

The Trepidation of the Eighth Sphere

Medieval astronomy calculated the positions of the planets starting from the locations of their apogees, assumed to be in the eighth sphere: the

⁴³ *Primum mobile duodecim libris contentum in quibus habentur Trigonometria sphaericorum et Astronomica, Gnomonica, Geographicaque problemata ac praeterea Magnus Trigonometricus Canon emendatus et auctus ac Magna Primi Mobilis Tabula ad decades primorum scrupulorum supputata* (Bologna: 1609).

⁴⁴ J.D. North, *Horoscopes and History*, p. 26.

⁴⁵ *Tabulae novae iuxta Tychonis rationes elaboratae quibus Directionum conficiendarum brevior ac faciliior quam unquam antehac a nemine ars traditur* (Bologna: 1619).

⁴⁶ *Ad librum posthumum de directionibus, anno superiori Bononiae excussum, praestantissimi Viri Ioan. Antonii Magini Patavini, in Bononiense Gimnasio Mathematicarum Professoris primarij, Prosthema, in quo quanto maxime fieri potuit brevitate, perspicuitate, ac methodo tota ars dirigendi quoscunque significatores ad promissores exponitur, quando absque usu calami circulus positionis indagatur, ac tandem unica vel altera supputatione omnis directionis calculus absolvatur quod a nemine hactenus traditum est* (Vicenza: 1620).

apogees were therefore considered to be fixed and participating in the motion of precession which had been estimated by Ptolemy to be of one degree every hundred years. But it was not long before the discrepancy between the calculated positions and those observed became rather large: William of St Cloud, in 1290, reckoned it to be a little more than ten degrees. At the beginning of the 14th century, the Alfonsine Tables, in rectifying the errors, give prevalence to a new law, according to which the eighth sphere moves with a composite motion: a uniform precessional motion, according to the sequence of signs but slower than the Ptolemaic model, and a motion of access and recess which carries with it the location of the fixed stars and apogees of the planets. Thus, the beginning of Aries changes sometimes according to the sequence of the signs and at other times against this sequence, with a maximum deviation of nine degrees. This last theory, which comes from Thâbit ibn Qurra (9th century) is already attested by Theon of Alexandria in his *Small Commentary* to Ptolemy's *Handy Tables*:

On the basis of certain conjectures, the ancient astrologers claim that the tropic points move eight degrees in a continuous direction from a certain initial moment in time and then go back according to the same quantity. But this is not so according to the opinion of Ptolemy, for the calculations made by means of his tables are in accordance with the observations carried out with the instruments, without the addition resulting from such calculations. For this reason, we too recommend not to consider this correction, though we nevertheless present its manner of procedure. These men hold that the greatest change of position in one direction occurred 128 years before the reign of Augustus when the retrogradation began. To these 128 years they add the 313 years elapsed from the reign of Augustus to the reign of Diocletian and in addition the years after Diocletian. They thus take the position which corresponds to this summation of years, taking into account that the movement [of the tropic points] is of one degree in 80 years. They therefore subtract 8 degrees from the number of degrees obtained from this division. The result indicates the degree of the change of position of the tropic points which they add to the above-mentioned calculations of the positions of the sun, the moon and the five planets.⁴⁷

The motion of oscillation of the tropic locations (one degree in 80 years) presents two maximal deviations of 8 degrees direct and retrograde. The breadth of this oscillation is therefore of the order of 640 years and can be illustrated by the following scheme:

⁴⁷ A. Tihon, *Le "Petit Commentaire" de Théon d'Alexandrie aux Tables faciles de Ptolémée* (Città del Vaticano: 1978), p. 236 (for the Greek) and p. 319 (for the French translation).

Breadth of oscillation	years of Augustus	years of Diocletian	years in common
0°	-670		-797
8°	-127	-441	-157
0°	513	200	483

This theory is called the trepidation of the eighth sphere. It leads to the alternation of the precessional motion from slow to fast. It is interesting to note that those who reject it, such as al-Bīrūnī and al-Battānī, do not attribute it, as Theon did, to the ancient astrologers, but to the makers of talismans (aṣḥāb al-ṭīsamāt),⁴⁸ i.e. to the astrologers who craft amulets modelled on celestial images. These astrologers should probably be situated in a period preceding Ptolemy and Hipparchus: according to al-Bīrūnī, they are the Babylonian “masters of judicial astrology.”⁴⁹ In a variety of forms, the theory of trepidation will be brought forth a number of times by many astronomers, the last of which was Copernicus.

*The Position of the primum mobile and the Distinction between
orbis totalis and orbis partialis*

The astronomy concerned with the *primum mobile* deals essentially with the mathematical laws inherent in diurnal motion. The *primum mobile* is, in itself, an immaterial sphere in which there are no celestial bodies. Counting from the Earth, it is the ninth in order, containing the sphere of the fixed stars. It is first because it is the closest to the first mover, i.e., to the immobile and eternal Aristotelian mover, which is the principle of motion in others (*Phys.* viii, 6). The cosmos is however, according to both the astronomers and the philosophers, principally constituted

⁴⁸ See al-Battānī, *Opus astronomicum*, ed. C.A. Nallino, Mediolani 1903 I, 126. The Arab expression can be translated in Greek as *stoicheiōmatikoi* as it appears in the ninth aphorism of the pseudo-Ptolemaic *Centiloquium*.

⁴⁹ al-Bīrūnī, *The Book of Instruction in the Elements of the Art of Astrology*, ed. R. Wright (London: 1934), 101, n. 191; see Idem, *The Chronology of Ancient Nations*, ed. C.E. Sachau (London: 1879), 322. The identification with the Babylonians is corroborated by the fact that one of the first observations of the equinoxes made by Hipparchus is dated to the 27th September 157 BC, the year corresponding to the maximal oscillation. In Babylonian terminology, the longitude of the Sun for that date would have been of Libra 8°, see O. Neugebauer, *A History of Ancient Mathematical Astronomy* (Berlin – Heidelberg – New York: 1975), p. 633.

of nine spheres. But for Aristotle, the limit of the cosmos is the sphere of the fixed stars, the eighth in order, which is therefore the outermost sphere. Subsequently, when the astronomers realized that the eighth sphere moves slowly according to the motion of precession, they posited a ninth sphere deprived of stars as more external still. This became, in scholastic philosophy, the *primum movens*, the source of all movement within the universe. Its natural property was held to be the same as that of the outermost sphere, which is the first according to Aristotle: having no other spheres above it, it does not receive any other influence save that of the prime mover. The desire which it harbors towards the latter causes it to move. The various designations which this sphere has been given are indicative of its primary status with respect to the others: such is the case for the terms *primum mobile* or *falak al-alfāk*, the sphere of spheres. The designations also indicate its status as a guide and as a supervisor insofar as it preserves and guards its own precincts: this is the case for the synonymous terms, in Greek and in Arabic, of *periéchon* and of *muḥīṭ*. In order to render all the more explicit what is proper to its nature, it must have the Earth as its centre, and its motion must be of the simplest kind, the most obvious to the senses, and also the fastest, the most apt for subdivision according to certain criteria depending on proportion. The modes and times of the influence of the skies proceed from the *primum mobile*, being the highest sphere, and then cascade down, going from sphere to sphere until they reach the prime elements which, in the sublunary world, are constantly driven to motion and change. Among the different metaphors elaborated by various authors concerning the spheres, we may recall here the image suggested by Giovanni da Fontana of Piacenza. He posits the influence of all planetary spheres in the head of man, being man's noblest part, and associates the sphere of the fixed stars with the brain and the *primum mobile* with the skull which contains it, encircling and comprehending everything.⁵⁰

The trepidation theory rapidly led to the necessity of positing other spheres beyond the ninth in virtue of the number of motions attributed to the sphere of the fixed stars. During the Middle Ages, the latter was assigned at least three motions: a diurnal motion, from east to west, a motion of constant recession of one degree every hundred years and a motion of

⁵⁰ *Liber Pompilii Azali Placentini de omnibus rebus naturalibus quae continentur in mundo, videlicet caelestibus et terrestribus necnon mathematicis et de angelis motoribusque caelorum* (Venice: 1544), fols. 66a, cited in L. Thorndike, *A History of Magic and Experimental Science*, vol. 4 (New York: 1934), p. 159.

access and recess which we have already mentioned. Keep in mind that every motion required its own sphere because a single sphere could not move according to more than one motion and no motion could subsist without a related sphere. Clearly the new motions had to be justified by additional spheres, considering the eighth sphere of the fixed stars to have only one motion of its own, that of precession, and attributing the other two motions to two respective spheres. The prevailing opinion according to the new arrangement was to assign diurnal motion to the tenth sphere and the motion of trepidation to the ninth. Even so, the *primum mobile* remained the outermost sphere, beyond which there was nothing other than the empyrean. It was in the ninth sphere that the crystalline or aqueous sky was situated, whose reality had been postulated by the Church Fathers on the authority of a passage from *Genesis*.⁵¹ This medieval cosmos arranged into eleven spheres was therefore in accordance with the Christian religion,⁵² and, though there was no lack of divergent opinions, Christopher Clavius declared, at the end of the 16th century, that it was the most commonly accepted arrangement in his day.⁵³

Thus, medieval scholasticism preserved the Ptolemaic order of the spheres but increased their number on the force of closely intertwined astronomical and theological argumentations.⁵⁴ The medieval cosmos is composed of ten spheres (sometimes eleven, when the *primum mobile* is distinguished from the crystalline sky): in addition to the *primum mobile*, the empyrean is posited as identical to the prime unmoved mover of Aristotle. It is sky of the purest light, where angels and saints reside. The empyrean, we could say, is where all the cosmic energy resides insofar as every underlying sky is extended towards it, through its own motion. The identification of the empyrean with the Aristotelian first unmoved mover

⁵¹ *Gen.* I, 7: "Dixit quoque Deus: Fiat firmamentum in medio aquarum: et dividat aquas ab aquis. Et fecit Deus firmamentum divisitque aquas, quae erant sub firmamento, ab hiis, quae erant super firmamentum. Et factum est ita."

⁵² See Francesco Giuntini, *Commentaria in Sphaeram Ioannis de Sacro Bosco accuratissima*, in: *Speculum Astrologiae, universam mathematicam scientiam, in certas classes digestam, complectens* (Leyden: 1581), vol. 2, p. 548.

⁵³ *Christophori Clavii Bambergensis ex Societate Iesu in Sphaeram Iohannis de Sacro Bosco*, in: *Opera Mathematica* (Mainz: 1611), vol. 3, 23.

⁵⁴ For a contrary view, see Pietro d'Abano, who claims that the crystalline and the empyrean exist only in theology and that they proceed neither from reason, nor from experience: *Il Lucidator Dubitalium Astronomiae di Pietro d'Abano*, ed. G. Federici Vescovini (Padua: 1988), 214. Compare J.B. Morin de Villefranche, among the last astrologers of the 17th century, who takes the two additional spheres to be merely fictional: *Astrologia Gallica* (The Hague: 1656), vol. 3, part 3, 2; pp. 96–97.

is a result of neo-Platonising Arabic philosophers, in particular Al-Farabi, who transformed the Aristotelian schema of the celestial movers, giving to each sky a single intelligence and postulating the derivation of the many from the one, and the complex from the simple.⁵⁵ Medieval Neoplatonism and Christian thought followed this path, attributing moreover to Aristotle a hierarchical order of the perfections of the skies based on the disposition of the orbits of the medieval cosmos. In the second book of *De Caelo*, however, Aristotle had connected the greater and lesser degrees of perfection, in reverse order, to the lesser and greater number of motions of the planetary spheres.⁵⁶

At the basis of this Platonizing interpretation of the Aristotelian text, there is the primary distinction in medieval astronomy between *orbis totalis* and *orbis partialis*: the first designates every concentric orbit whose centre is the centre of the Earth (*centrum mundi*), the second designates every eccentric orbit whose centre is a geometrical point that does not coincide with the centre of the Earth. *Orbes partiales* are all the planetary spheres, both eccentric and epicyclic, while the *orbis totalis* is *par excellence* the *primum mobile*,⁵⁷ which is here identical to the crystalline, but indeed also to the sidereal sky or eighth sphere and empyrean. It is to these three spheres, says St Thomas, that the term *caelum*, in its proper sense, belongs.⁵⁸ True enough, the virtues which derive from the seven planetary skies, from Saturn to the Moon, are specific and differentiated virtues: their role, as Dante tells us, is “to bring satisfaction to the world which calls to them.”⁵⁹ Those deriving from the skies beyond the planetary spheres are universal and undifferentiated: according to some, it is by means of the light proceeding from the sidereal sky that body takes on its vegetative soul, while through the light of the crystalline sky, it receives animal or sensitive soul, and through the light of the empyrean,

⁵⁵ See P. Jaussen, Y. Karam, J. Chlala, *Alfarabi, Les idées des habitants de la cité vertueuse (Madīna al-Fādila)* (Cairo: 1949), p. 34.

⁵⁶ See Thomas Aquinas, *de caelo* I, lect. 4; Jean Fernel, *Cosmotheoria* (Paris: 1528), fol. 28b.

⁵⁷ See P. d'Ailly, *XIV Quaestiones... Quaestio XIII* (Venice: 1531), fol. 163v.

⁵⁸ *Summa Theologiae* I, 68, 4, c. When St Paul says that he has been transported to the third sky, “sive in corpore nescio, sive extra corpus nescio” (*II Cor.* 12, 2), this sky is understood by St Thomas to be the empyrean, see op. cit., II, II, 175, 3 ad 4.

⁵⁹ *Paradiso* X, 15.

the intellective soul. This opinion is refuted by St Thomas⁶⁰ but nevertheless is positively recalled until the 17th century.⁶¹

However, according to a more general distinction, the astronomy concerned with the *primum mobile* is contrasted with the *secundi mobiles*. The first, accounting for the laws of diurnal motion, deals with that which, in the world of generation, is characterized by continuity. The second, which describes the motion of the planets, deals with appearances which are different from one another and thus concerns that which, in the world of generation, is characterized by difference and contrariness. In the Middle Ages, this distinction is general and primary, being no less philosophical than astronomical. We find it referred to by astronomers such as Sacrobosco as well as by Thomas Aquinas: the *primum mobile* is the closest being to the first being and therefore fulfils its nature with one single motion.⁶² Dante thus declares:

e questo cielo non ha altro dove
che la mente divina, in che s'accende
l'amor che il volge e la virtù ch'ei piove

...

Non è suo moto per altro distinto;
ma li altri son misurati da questo,
sì come diece da mezzo e da quinto.⁶³

This heaven has no other where than this:
the mind of God, in which are kindled both
the love that turns it and the force it rains

...

No other heaven measures this sphere's motion,
but it serves as the measure for the rest,
even as half and fifth determine ten.

In this sky, Dante continues, there are the roots of time. There is no distinction of quality, but only of time. The former distinction refers to the skies of the planets, which make it manifest by pursuing their orbit. The latter distinction takes the planets themselves as agents, but insofar as they are dragged along, *rapti*, by the vertiginous motion of the *primum*

⁶⁰ *Summa Theologiae*, I, 76, 7, c.

⁶¹ See Andrea Argoli, *De Diebus Criticis et de Aegrorum decubitu libri duo* (Padua: 1639), 4.

⁶² *De caelo* II, l. 18, n. 458.

⁶³ *Paradiso* XXVII, 109–111; 115–117. Standard translation by A. Mandelbaum, *The Divine Comedy* (New York: 1995).

mobile. The foundation of the art of prediction in the Middle Ages and the Renaissance consists in the joining of these two distinctions.

New Techniques

Humanism brought about the gradual rediscovery of Greek language and literature; this allowed European astrology to seize again what was always considered to be its classical heritage. This was a long process which would not lead to a real integration of the two recognized astrological traditions, different in language and in culture, namely, the Greek and the Eastern. In 1501, the *De expetendis ac fugiendis rebus opus* by Giorgio Valla was published posthumously. In the last book (*De introductione ad astrologiam*) of section XIX of this voluminous work,⁶⁴ the humanist from Piacenza collects a number of passages from the *Introductio in Tetrabiblum Ptolemaei* attributed to Porphyry, together with a number of *scholia* by Demophilus, definitions taken from the *Isagoge* of Paul of Alexandria, from the *Thesauri* of Antiochus of Athens, from books of the *Apotelesmatics* of Hephaistio of Thebes, from the *Anthologiae* of Vettius Valens, and a few fragments by Julian of Laodicea. The following year there appeared the Latin translation, by Valla, of the anonymous Greek commentary to Ptolemy's *Tetrabiblos*.⁶⁵ The Greek text, with a new translation, would subsequently be edited by Hieronymus Wolf in 1559.⁶⁶ In 1535, Joachim Camerarius published the first edition of the Greek text of the *Tetrabiblos* with a translation of the first two books (as well as two chapters of book three). To complete the work, he published, for the rest of the chapters, the translation from the Arabic made by Plato of Tivoli. Only from 1548, after Antonio Gogava finished the translation begun by Camerarius, Renaissance astrologers finally had at their disposal a complete Latin translation of the Greek text.⁶⁷

In his introduction to Gogava's version, Gemma Frisius emphasized that the Ptolemaic text, purified of barbarisms, clearly showed how far the astrologers of the past had been from the true art. The rediscovery of Ptolemaic

⁶⁴ "De tota astrologia libri IIII in qua fabrica, ususque astrolabij exaratur et quæ signorum in exhibendis medicaminibus sit habenda observatio."

⁶⁵ *Preclarissimi vii Georgij Valle Commentationes. In Ptolomei quadripartitum inque Ciceronis Partitiones et Tusculanas questiones ac Plinij naturalis historie* (Venice: 1502).

⁶⁶ *In Claudii Ptolemæi quadripartitum enarrator ignoti nominis, quem tamen Proclum fuisse quidam existimant*... (Basel: 1559).

⁶⁷ *Cl. Ptolomæi Pelusiensis Mathematici Operis Quadripartiti in latinum sermonem tractuctio, adiectis libris posterioribus, Antonio Gogava Graviensi interprete* (Louvain: 1548).

astrology was a founding element of the Renaissance, for it allowed a distinction between a true and a false astrology, the latter contaminated by Arabisms, superstition and divinatory practices. The aim of astrology thus became more precise: not divination, but prediction on the basis of real signs, just as the medical doctor makes predictions, on the basis of the veins and urine of a sick man, or as seamen make conjectures about future storms on the basis of the behaviour of dolphins.⁶⁸ True astrology relates what occurs through the virtues of the skies, whose movements and light alter the air, the sea, the earth and cause different effects in the atmosphere.⁶⁹

Another Latin version of the *Tetrabiblos* was published in 1553 by Philip Melanchthon.⁷⁰ After learning astrology from Johannes Stöfler in Tübingen, he had given public readings of the *Tetrabiblos* between 1535 and 1546 at the University of Wittenberg. He was intent on reforming astrology, raising it to the status of a universal science. For Melanchthon, astrology is part of the study of nature, *pars physicae*, or as Casper Peucer put it, “*pars verae et eruditae physiologiae*.”⁷¹ Astrology shows man what the divine will is and how divine providence functions.⁷² The latter, having come down to us through the first patriarchs and having subsequently degenerated into superstition to be eventually expurgated,⁷³ guarantees the truth of the holy Book and manifests itself as the “servant of theology.”⁷⁴ Thus in his *Admonitio de astrologiae usu*, Hieronymus Wolf declares that God

⁶⁸ Francesco Cigalini, *De mathematica praesensione dialogus*, I, 35; in: *Caelum sidereum* (Como: 1655): “Astrologia non divinare, sed praedicere, ut medicus a venis et lotio ægrotum, ut nautæ a delfinis maris procella autumant.”

⁶⁹ P. Ciruelo, *Tratado en le qual se repruevan todas las supersticiones y hechizarias: muy util y necesario a todos los buenos Christianos zelosos de su salvacion* (Barcelona: 1628), 61–62: “La verdadera astrologia habla de cosas que se causan por las virtudes de los cielos que con sus movimientos y luzes alteran el ayre y la mar y la tierra y ansi causan diversos efetos de tiempos... la falsa astrologia no es arte ni ciencia verdadera, antes es una supersticion.”

⁷⁰ Claudii Ptolemaei Pelusiensis libri quatuor, compositi Syri fratri. Eiusdem Fructus librorum suorum, sive Centum dicta, ad eundem Syrum. Innumeris quibus hucusque scatebant mendis, purgati (Basel: 1553).

⁷¹ *Commentarius de præcipuis divinationum generibus, in quo, a prophetiis, autoritate divina traditis, et a Physicis coniecturis, discernuntur artes et imposturae Diabolicae, atque observationes natæ ex superstitione, et cum hac coniunctæ: Et monstrantur fontes ac causæ Physicarum prædictionum: Diabolicae vero ac superstitionosæ confutatae damnantur...* (Zerbst: 1591), 420a.

⁷² Ph. Melanchthon, *Initia doctrinae physicae dictata in Academia Vuitebergensi* (Wittenberg: 1549), vol. 2, cc. 1–2.

⁷³ C. Peucer, *Commentarius...*, 390b.

⁷⁴ Cfr. Claudia Brosseder, “The Writing in the Wittenberg Sky: Astrology in Sixteenth-Century Germany,” *Journal of the History of Ideas* 66 (2005): 570.

pinxit enim cœlum mirabili quadam scriptura, quam si perfecte possemus legere, perfecte essemus sapientes.⁷⁵

painted the skies in such wonderful writing that if we could read it perfectly, we would be perfectly wise.

He therefore takes up the commonplace of the sky as a layer of skin or a written book. But this metaphor is conceived within a theological vision of the natural universe. But it is understood differently by Cardano. In his commentary to *Tetrabiblos* IV, 10 (*de morte*), the Pavian doctor criticises those who, ignorant of the Ptolemaic method, do not know the *ratio commixtionis*:

Those who attempt to make predictions following general lines, as do the Arabs, Firmicus, Pontanus and others in more recent times, proceed in a way similar to the man who, wanting to build a house, arranges in order all the beams in one place, all the planks in another, in yet another all the limestone, in another, all the sand, in another the stones, in another the iron braces, and in another the tiles. This man thinks he has done well, having observed the right ordering. He has however, done nothing in order to build a house. Not unlike him, are those who say: Saturn in such and such a place signifies such and such a thing, Jupiter, something else. For this is useless and does not help prediction. Rather, it is necessary, for each thing, to know the principle of conjunction and the time, mode, order and place. It is necessary, in short, to know how to join together the individual significations. For example: Saturn in Aries, ascending, means in some cases the state of the body, and in others, the general working of the soul, and in others still the time of life, or possessions, and sometimes can mean friends or the condition of one's wife or dignity, or children, or the quality of one's death, or travels etc. And if someone were to say 'I have put in order the planks, the nails, the hammers, the stones and all the rest, but the house is not yet built; therefore the art of house building is worthless,' would not the builder and everyone else laugh at him? In the same way, were you to say: 'the books of the astrologers lie whenever they affirm, if Saturn or Jupiter are in such and such a sign, in such and such a house, in such and such a figure, etc., then such and such things happen to a man, in truth, sometimes, these things may happen, but sometimes they do not, and therefore the art of prediction from the stars is in vain,' you would be worthy of scorn, no less and no more, than the other man.

Now, you could say: "But this is a truly difficult path!" And what are you so surprised about, my dear friend? This is the book of God, best and greatest,

⁷⁵ In: C. Leowitz, *Brevis et perspicua ratio iudicandi geniturarum, ex physicis causis et vera experientia extructa: et ea Methodo tradita ut quivis facile, in genere omnium Thematum iudicia inde colligere possit...* Præfixa est Admonitio de vero et licito Astrologie usu per Hieronymum VVolfium... (London: 1558), fol. B3v.

this is the sky. And it is like a book written in minute letters. Some read something, like Ptolemy, as we do, who have precisely interpreted Ptolemy in a complete manner, without leaving out a single syllable. Others read a little less, others even less, and many, probably nothing—either because they are driven away by the yearning of their appetite, or because they are not versed in philosophy, or because they lack a deep understanding, or are ignorant of the principles of theoretical astrology, the motions, the magnitudes, the positions etc., or because they do not work hard enough at this book or are not trusting enough, or are deceived by a false nativity, or because, in the case of a true nativity, not everything happens according to what was predicted.⁷⁶

Simply declaring that whatever Ptolemy “transmits to us concerning the stars must be connected to physical argumentations”⁷⁷ is thus insufficient. Cardano here is criticising, among others, Firmicus and Pontano, who for Peucer are nonetheless solid authorities in matters of astrology.⁷⁸ The *ratio commixtionis* is referred to by Cardano as one of the basic principles of the art of astrology. Indeed, the Ptolemaic astrologer does not make judgements by adapting the rules he reads in a handbook to the configurations of a *nativitas*, whether the handbook happens to be the one by Firmicus or one by an Arabic author. Instead, he proceeds by evaluating the ways in which the stars—not as one with respect to another, but each in its own sidereal, synodical, and diurnal revolution—create, to our eyes, certain *mixtiones* and relations. He thus considers their arrangement, and which testimonies are stronger and which weaker, and which nature prevails concerning one matter, and which, concerning another; and how such a nature presents itself with respect to another: whether it is pure or altered, whether it is reinforced or weakened.

The return to Ptolemy in humanistic culture leads to a modification of the technical terminology of astrology. Not only are many Arabic terms abandoned, but other terms are created on the basis of a close reading of the Ptolemaic text. The first commentary to the Ptolemaic *Tetrabiblos*

⁷⁶ In: *Opera Omnia*, Vol. 5 (Leyden: 1663), 355. Concerning the book of the universe in astrological thought, see G. Bezza, *Liber scriptus et liber vivus. Les antécédents astrologiques de la métaphore galiléenne du Livre de l'univers*, in: G. Gnoli, A. Panaino, eds., *Kayd. Studies in History of Mathematics, Astronomy and Astrology in Memory of David Pingree* (Rome: 2009), 1–16.

⁷⁷ G.G. Pontano, *Commentariorum in centum Claudij Ptolemæi sententias, libri duo* (Basel: 1531), 17. This is from the commentary to aphorism vii.

⁷⁸ See *Commentarius* . . . , 436.

written by a humanist, was published by Agostino Nifo in 1513.⁷⁹ In this commentary, which arises from a series of readings given at the faculty of medicine in Naples, Nifo creates new technical terms for the astrological vocabulary. Among these, the three definitions of *mixtio* deserve particular attention: *configuratoria*, *iurisdictionaria* and *habituaria*. The first concerns the configurations or *schemata* of the stars, the second, the relations or *logoi* of the planets of the zodiac, from which the dominant can be inferred, the third refers to the relation of the planets with respect to the sun, both as far as their motion is concerned as also their variations of brightness.⁸⁰

The art of astrology follows an order going from the simple to the complex. It is divided into as many parts as there are elements of the universe. Now, the elements are either simple or composite. The judgment made about the simple elements concerns the hot and the cold, the humid and the dry, and generally, every meteorological impression. But the judgment made about mixed elements, such as the animated beings, is concerned with penury or wealth, plagues and the wholesomeness of the air and all that belongs to the social body. In the European Middle Ages, these two sides of a judgment—more the second than the first—are profoundly influenced by Arabic astrology. John of Ashenden, at the beginning of his treatise,⁸¹ places, face to face, Ptolemy and Albumasar: the first has given the rules concerning the eclipses and the syzygies, but has kept silent about the great conjunctions of the superior planets which Albumasar presents exhaustively.⁸² John of Ashenden observes that the authority of

⁷⁹ *Ad Sylvium Pandonium Boviani episcopum Eutichi Augustini Niphi Philothei Suessani ad Apotelesmata Ptolemaei eruditiones* (Naples: 1513).

⁸⁰ Nifo's new lemmata, though they were not widely successful, answer to the principles of the art according to Ptolemy. Consider however, an important exception: Johannes Schröter, *Tabulae, ex quibus quisque facile discet, qua via praedictiones rerum futurarum elici debeant, ad usum studiosorum in Academia Viennensi compositae* (Vienna: 1551). On the other hand, if the *mixtio iurisdictionaria* recalls law, there is no lack of astrologers who, in addition to establishing an analogy as far as their *modus operandi* is concerned, between astrology and medicine which became commonplace, connected also astrology with law, see N. Winckler, *Tractatus de astrologiae, et omnium artium principiis, et differentiis divinationum, contra Anonymos quosdam, qui nulla in Astris causas esse contendunt* (Frankfurt am Main: 1580), fol. A8v; see Placido Titi, *Tocco di paragone, onde evidentemente appare che l'astrologia, nelle parti concesse da S. Chiesa è vera Scienza, naturale, nobile, et utile quanto la Filosofia* (Pavia: 1665), 19–20.

⁸¹ *Summa astrologiae iudicialis de accidentibus mundi, quae anglicana vulgo nuncupatur, Johannis Eschuid viri anglici eiusdem scientiae astrologiae peritissimi* (Venice: 1489), vol. 1, part 1, fol. 2b.

⁸² *Ibid.*, fol. 2b.

Ptolemy, in the universal apotelesmatic, is limited to the eclipses which constitute a small part of prediction. The Arab astrologers, on the other hand, are the only authorities when it comes to the great conjunctions and the revolutions of the years in the world. Their techniques constitute a doctrine providing a plausible model for reading history and the great social changes, grounded as it is on a regular sequence of the average motions of the superior planets. From the eclipses, syzygies and comets that constitute the grounding principles of the Ptolemaic universal apotelesmatic, it is impossible to draw out any form of regular cycle. Campanella remarks that from eclipses, one cannot have knowledge of the great changes, for they are indications of events which do not last more than thirty months; therefore, the Ptolemaic doctrine is defective.⁸³ Cardano had already answered such an objection by saying that Ptolemy does not deal with the more long-term effects connected with the conjunctions of the three superiors, especially Saturn and Jupiter, because these effects come about later, and less obviously, so they pertain rather to the domain of prophets than to astrologers.⁸⁴ But Cardano himself, in his commentary to *Tetrabiblos* II, 9 (*Of the colours of eclipses, comets and the like*) dwells on the subject of the *magnus annus* and confirms the theory of the great conjunctions—not however, based on average motions, but on true motions.⁸⁵

Cardano's attitude may seem contradictory, but if we consider all the commentators of Ptolemy, we can see that the doctrine of the great conjunctions is never completely rejected. In his *excerpta* to the *Tetrabiblos*, Bonincontri accepts it without a note of commentary,⁸⁶ as does Conrad Hemgarter in his copies of the commentary written by Ibn Ridwan.⁸⁷

⁸³ *Astrologicorum libri VI, in quibus Astrologia, omni superstitione Arabum, et Iudaeorum eliminata, physiologicè tractatur* (Leyden: 1629), vol. 2, part 3, 1, 66: "Mancus est Ptolemæus in sua doctrina cum solis eclipsibus mutationes det, et initia rerum, cum enim istæ sint parvæ durationis, non nisi super res parvi temporis indicationem habent (...) Oportet ergo causas potiores accipere, quod Albumasar cognovit, sed non perfecit."

⁸⁴ *Opera Omnia*... p. 195: "Illud animadvertendum est quod de effectibus longioribus non tractat Ptolemæus, quæ spectant ad coniunctiones trium superiorum, maxime Saturni et Iovis, quia effectus tardiores sunt, et non adeo evidentes: qui potius ad prophetas pertinent quam ad astrologos."

⁸⁵ *Opera Omnia*... pp. 214–215.

⁸⁶ *Excerpta per me Laurentium Bonincontrum Miniaticensem ex quadripartito Ptholomei et expositione Hali commentatoris sive Porphirij*, ms. Laurentianus Pluteus 29, 3, fo. 70v.

⁸⁷ *Ad illustrissimum Io. Borbonij atque Alvernie ducem Conradi Hemgarter Thuricensis, doctoris medici et Astrologi in Quadripartiti Ptholomei commentarios*, ms. BN-Paris lat. 7305, fo. 132v; cfr. BN-Paris lat. 7432 fo. 46r.

Bonincontri and Hemgarter, to whom we may add Giuliano Ristori,⁸⁸ attempt in this way to reach a conciliation of the doctrines of Ptolemy and Albumasar. However, the numerous yearly prognostics, *iudicium ac tacuinus*, which the professors of astronomy in Bologna were expected to publish until the beginning of the 18th century, show a distinctly prevailing presence of Arabic elements over Ptolemaic influences. Humanistic culture, the return of Ptolemy, the Melanchthonian reform of the art, had a greater effect on the *nativitates* than on the *revolutiones annorum mundi*, while the doctrine of the conjunctions persisted until the 17th century, when the Jesuit Giuseppe Cervi affirmed that there were a great many astrologers who depended on it.⁸⁹ In order to justify the annual revolutions and the determinations of the horoscope at the time in which the sun enters the first minute of Aries, Giuliano Ristori appeals to the authority of Ptolemy who, in the third book of the *Almagest*, questions the possibility of pinpointing such a moment.⁹⁰ But in this passage,⁹¹ Ptolemy simply wants to demonstrate the non-inequality of a tropical solar year, on which Hipparchus had expressed some doubts. In any case, there is no annual prognostic which does not begin with the entrance of the sun in Aries.⁹² This principle is taken to be the most valid in order to gauge worldly events. It comprises within itself, as Domenico Maria Novara explains, the doctrine of the great conjunctions, the eclipses and the syzygies.⁹³ But Domenico Maria himself, in his prognostic to the year

⁸⁸ *Lectura super Ptolomei quadripartitum reverendi ac eximij magistri Iuliani Ristori Pratenſis per me Amerigum Troncianum, dum publice legeret in almo Pisarum gymnaſio currenti calamo collecta*, ms. Firenze Riccardiana 157.

⁸⁹ *Anergica magnarum coniunctionum Panurgia. Problema Physico-Theologico-Astrologicum*, Parmæ 1683, 67: "Non est opus authores huius ſententiæ patronos recensere, qui poſt Albumasarem, et Alchabitium adeo pullularunt, ut perpauciſſimi aſtrologorum ab ea non ſteterint."

⁹⁰ *Lectura super Ptolomei . . . cit.*, fo. 204r. See L. Bellanti, *De aſtrologica veritate* (Florence: 1498), XIII, 2. He interprets *quadripartitum* II, 10 (*de novilunio*) with the help of certain maxims from the pseudo-Ptolemaic *centiloquium*, in particular n. 64. Cigalini caustically remarks againſt Bellanti, *op. cit.*, 300: Cur laboramus interpretari Ptolemaeum quando ipſe lucidus ſit et perſpicuus?

⁹¹ *Almageſtum* III, 1.

⁹² See *Ad Tabulam quadripartiti Ptolemaei explanationes et commentationes, accedit capitulum de domino anni*, ms. Laurentianus Ashburnam 202, fo. 55r: "Aſtrologorum uni-verſitas tocius anni principium et mundi revolutionis introitum ſolis in ariete notare conſuevit et iudicia annalia ſuper ſigna huiuſcemodi revolutionis fundant."

⁹³ *Pronoſticon magiſtri Dominici Marie de Ferraria anni domini 1484*: "Scias quod revolutiones annorum mundi qui certitudinem iudicij in pronoſtican-do demonſtrant ex tribus poſſiſſimis partibus complentur. Et prima illarum que omnibus fortior exiſtit ſumitur a gradibus magnarum coniunctionum et a perfectu ex locis ipſarum cum applicatione loci

1496, abstains from setting up the figure of the *introitus solis in Arietem* because of the grave errors one inevitably incurs.⁹⁴

The *revolutio annorum mundi* not only offered a difficult astronomical question which astrologers were unable to answer. It appeared in Arab astrology of the Abbasid period, whose authors were, for the most part, Persian, trained on the basis of translations from the Greek of texts by Dorotheus, Ptolemy and Vettius Valens. The universal apotelesmatic which took shape in what would be known as the first period of Arab astrology, was strongly influenced by Indian and Persian elements. It was modelled on the Greek structure of the nativity doctrine, like clothes on a body, by means of a passage from the microcosm which is man to his surroundings. In this way, the techniques of prevision of future times of the life of an individual, described by Dorotheus, Ptolemy, Vettius Valens, Paul of Alexandria, were adapted to the life of the social body in which an individual found himself. The doctrine of the revolution of the years, which Greek astrologers constructed with respect to the human being, was re-composed, while maintaining in place all its elements, with respect to universal events. In this context, the doctrine of the great conjunctions of the superior planets came as the completion of a theory presented as one endowed with a wonderful regularity. The European astrologer of the Middle Ages and the Renaissance was aware that in the doctrine handed down by the Greeks and in the Ptolemaic doctrine, there was something missing—a shortcoming which was remedied by the Oriental school. Clearly, the astrological art depended on motions, which had to be known in order to pronounce any judgements. And although the Oriental school assumed a kind of astronomical knowledge that would become possible only after Tycho Brahe, nonetheless it offered an interpretative theory which was, in itself, coherent and conclusive. This is the paradox. And yet, as far as the theory was concerned, there was room for discussion. The

divisionis. Secunda vero fuerit ex eclipsibus que accidunt in sole et luna in quantitate tenebrarum: hanc autem viam insequitur Ptholomeus in secundo quadrupartiti. Aliam vero tradit Geophar in libro de magnis coniunctionibus et quidam revolvunt super hec duo principia sicut Albumasar tractatu preallegato videtur annuere. Tertia vero et ultima ab introitu solis in puncto vernalis equinoctij et ab hora coniunctionis seu oppositionis luminarium cum dispositione stellarum perficitur. Necesse est igitur pronosticatorem super his tribus principijs considerare si qualitates futurorum effectuum prescire voluerit.”

⁹⁴ See now F. Bonoli, G. Bezza, S. De Meis, *I pronostici di Domenico Maria da Novara* (Florence: 2012). For such errors and similar, it is enough to quote Gemma Frisius in the preface to Johannes Stadius, *Ephemerides novae et auctae ab anno 1554 ad annum 1576* (Cologne: 1560): “Taceo æquinoctij verni situs fallacissimos, et alia multa.”

anonymous Cracow commentator of the first two books of the *Tetrabiblos*, mentioned in note 92, tried to distinguish theoretically between the Ptolemaic principle, based on syzygies and eclipses, and the Arab principle, based on the *revolutio annorum mundi*:

The strongest virtue of the sky is that which is produced at the time of the conjunction or opposition which precedes the entrance [of the sun in Aries] and not the one which occurs at the time of the entrance itself. This virtue is what prevails and dominates the whole interior of the quadrant, while the virtue of the entrance is secondary and follows the former in the same way as the minor virtue follows the major, and therefore the strongest changes the minor and draws it to itself. It is necessary for this reason, first and foremost, to consider the configuration of the sky at the time of the conjunction or opposition which precedes the entrance of the sun at the point of the quadrant whose nature we want to know, given that that configuration is universal and principally referred to the changing of the elements. Afterwards, we shall consider the configuration at the time of the entrance, insofar as it is properly and particularly referred to the *elementata*, given that the virtue of the sky does not reach the *elementata* other than through the elements. In this way, we will have correct knowledge of the temperament of the quadrant.⁹⁵

From the Ptolemaic principle, the elements are judged; from the Arabic principle, the *elementata* are judged: i.e. mixed living bodies made up of elements. The two approaches, according to this view, are thus complementary and not antithetical.

⁹⁵ *Ad Tabula quadripartiti Ptolemaei* . . . , op. cit., fols. 56v–57r: “Postquam igitur est quod virtus celestis forcior est illa que fit tempore coniunctionis aut oppositionis precedentis introitum quam illa que fit tempore introitus: est nam tanquam victrix et domina tocus quarti, et virtus introitalis est tanquam secundaria et sequens illam sicut virtus minor sequitur maiorem et forcior mutat minorem et reducit eam ad se. Necesse est in primis considerare configuracionem celestem tempore coniunctionis aut oppositionis precedentis introitum solis in punctum quarti cuius natura querimus et quoniam illa configuracio est universalis ad elementorum mutacionem principaliter relata. Deinde considerabitur configuracio tempore introitus tanquam particulariter ad elementata prope relata, quoniam virtus celestis non pervenit ad elementata nisi per elementa et ita debite complexio quarti cognoscetur.”

CHAPTER THREE

THE RETURN TO PTOLEMY

Ornella Faracovi

The cultural renewal that characterized the Renaissance period could hardly fail to involve the field of astrological studies; and indeed we may discern a twofold movement: a turn away from medieval traditions on the one hand, and on the other, a direct confrontation with the lessons of the Classical writers on the topic, especially with the greatest among them, Claudius Ptolemy. What came out of this was a profoundly different version of astrology with respect to that of the Latin Middle Ages, especially in regard to the philosophical implications. The new version showed a marked departure from the Arabic literature, which, translated into Latin, had greatly influenced the medieval form of Western astrology and the associated debates. Its proponents purported to purify astrological studies of what they termed the “*nugae arabum*,” the trifles of the Arabs, and vigorously opposed the hermetical and magical interpretations of astrology, inherited from the late Middle Ages, and thus a whole new area of astrological studies was born.¹

The elements of continuity that have characterised astrology since its origins, especially in respect to technique, coexisted in the Renaissance with new features, so that this period became one of the great turning points in the long history of the art. The fundamental procedures, originating within Babylonian culture many centuries before Christ, were codified in Greek and Hellenistic times in forms that to a large extent would resist the passage of time. Once they received their structure, they continued to be transmitted across the centuries, largely unchanged. They thus became the nucleus of a tradition through which they travelled, from one phase to another, one circle to another, one author to another; hence the strong repetitiveness of most astrology handbooks. Such handbooks often

¹ On the distinction between astrology and magic see O. Pompeo Faracovi, *Gli astrologi e la magia*, in *La magia nell'Europa moderna. Tra antica sapienza e filosofia naturale*, a cura di F. Meroi, con la collaborazione di E. Scapparone (Florence: Olschki, 2007), vol. I, pp. 147–163.

take the form of a compilation designed to transmit the codified body of knowledge with minimal variations. Only a few great treatises, in different times and contexts, provided some re-elaborations and critical re-examination. The first among these is certainly one of the most important: namely, the *Tetrabiblos* by Claudius Ptolemy, written around the middle of the 2nd century AD. Amid the continuity of the astrological tradition there were breaks and shifts marking clearly identifiable phases and tendencies. At such times the significance of astrology was re-examined and redefined, new procedures were added to the classical techniques, while the basic procedures emphasised different aspects of the tradition. Consolidated approaches lost their age-long centrality, while attention came to be drawn to aspects previously considered as mere details. Another of these moments of renewal began between the end of the 15th century and the beginning of the 16th century, at a time when the dominant trends of the Middle Ages came to be viewed critically and selectively. These trends derived from the Latin translations of Arabic texts, composed between the 11th and 12th centuries, as well as from the rediscovery, during that time, of the last astrology handbook of the late Latin period, the *Mathesis* by Firmicus Maternus, written in the 4th century.² In the Arabic treatises, an essential source for the Latin Middle Ages, the procedures of individual and general astrology had come to be part of a common language in which there co-existed suggestions of various and sundry origins, Helleno-Babylonian, Persian, Indian, Hebrew, Hermetic and Harranian, while a form of convergence emerged between astrological techniques on the one hand, and magical and divinatory influences on the other. In the West, the Latin versions of the Arabic texts triggered a great interest in this art, which came to be understood as a *scientia media*, an organic component of a comprehensive vision of the world, rapidly integrated into the *curricula* of university, as a component part of studies of astronomy and medicine. The texts gave rise at the same time to complex operations of selection going beyond the limits of natural philosophy and involving the distinction between one form of astrology and another, attempting to avoid pretensions of infallibility in predictions and to restrict the Hermetically-inspired magical practices.

² On this question, cf. D. Juste, *Les Alchandreana primitifs: étude sur les plus anciens traités astrologiques latins d'origine arabe, X^e siècle* (Leiden – Boston: 2007); Charles Burnett, "Arabic and Latin Astrology Compared in the Twelfth Century: Firmicus, Adelard of Bath and 'Doctor Elmirothi' ('Aristoteles Milesius')," in *Studies in the History of the exact sciences in honour of David Pingree*, ed. by Charles Burnett, J.P. Hogendijk, K. Plafker, M. Yano (Leiden – Boston: 2004), pp. 247–263.

From the end of the 15th century, the humanist idea began to interact with astrology's perplexities and with the questions raised in the late Middle Ages about astrological determinism deriving from the Arabic compendia. Thus the recovery of ancient culture was applied as well to astrological studies. The new philological sensibility provided a new horizon in those times, and new attention was devoted to identifying the differences between Ptolemy and his Arabic and Medieval followers and interpreters. In the most informed circles, the result was a partial detachment from the dominant vulgate in astrology. An example will serve to clarify the matter. Between the end of the 15th century and first decades of the 16th, aided by the spread of printing techniques, annual prognostics proliferated, predicting the main events for each year concerning meteorology, warfare, dynastic successions, and plagues. This literature was based on techniques belonging to Arabic astrology, in particular regarding the great conjunctions, as elaborated in the works of Albumasar that enjoyed such renown in the medieval West. It is precisely on the basis of one such great conjunction, supposed to take place in February 1524 between Jupiter and Saturn in the sign of Pisces, that predictions proliferated about the coming of the next universal flood. Prognostics of this kind, which generated widespread collective fears, were placed in doubt by the scholars who were most sensitive to the lessons of the Classics. Already by the end of the 15th century, such predictions were dismissed by one of the fathers of Renaissance Platonism, Marsilio Ficino, who was also an attentive astrologer. In 1519, the doctor, philosopher and astrologer, Agostino Nifo overtly questioned them, having recourse to an argument about their incongruity with respect to Ptolemy's indications. A few years earlier Nifo, who was giving a cycle of lectures on the Ptolemy's *Tetrabiblos* in the Faculty of Medicine at Naples that was eventually printed, drew attention to the fact that the technique of annual prediction took on a different aspect in the *Tetrabiblos* from that which the Arabic scholars and the subsequent astrological divulgation had given it.³

A more accurate examination of the technical elements of prediction soon began to inspire philological efforts to recover the original text of Ptolemy. Alongside the Latin versions, taken from the Arabic by Plato of Tivoli, John of Seville, Hugh of Santalla, Herman of Carinthia and by then available in print,⁴ there began to circulate new translations, directly from

³ Agostino Nifo, *De nostrarum calamitatum causis liber ad Oliverium Carafam cardinalium maximum*, (Venice: 1505); Id., *De falsa diluvii prognosticatione* (Naples: 1519).

⁴ The *Liber Quadripartitus* by John of Seville was printed in Nuremberg in 1548 in the publishing house of G. Montano and U. Neuber, with the title *Epitome totius astrologiae*.

the Greek text. This was the case for the two astrological works ascribed by the tradition to the Alexandrine scholar: the *Tetrabiblos*, rendered in Latin as the *Quadripartitum*, and the *Karpos*, in Latin the *Centiloquium* or *Fructus*. The two texts were very different one from the other, in respect to style as well as to theory. The first was a thick treatise in four books, very specialised which made for an arduous reading, so much so that its author was qualified as '*obscurissimus*', by Cardano.⁵ Using a dry and unadorned language, devoid of rhetorical artifice, the *Tetrabiblos* was a condensed reformulation of essential notions about planets, aspects, signs, relations between planets and signs (book I), astrological geography, general events, meteorology (book II), individual horoscopes (book III), and presented a detailed analysis of their specifications (book IV). The treatise comprised a revision of the astrological tradition, consolidating its geometric and astronomic foundations. It connected her themes to a natural philosophy of Peripatetic origin, leaving no room for the action of demonic or super-natural forces. The planets were taken to be physical entities, whose movements and relations of reciprocity were to be put down to natural effects on the materials of the sublunary world. Beneficial planets were those (Jupiter, Venus) whose effects were favourable to material life. Malefic planets (Saturn, Mars) were those which impeded it. There was no indulgence in magical and divinatory practices, though these were present in the Hermetic Egyptian tradition with which Ptolemy, as an Egyptian, was conversant; he quotes from this tradition only regarding medical applications. There was no room for the Stoic theme of the infallibility of predictions.

In the *Tetrabiblos*, due to the complexity of earthly things, astrological predictions referring to particulars stemmed only from conjecture. Though they could not reasonably claim to be free of errors, they were presented as useful knowledge for indicating which precautions to take, as in the case of astrological medicine in Egyptian circles, which attempted to influence, through various remedies, the general and particular conditions of the surrounding circumstances, implicitly countering the idea

Quadripartito et Centiloquio. In the medieval versions, Ptolemy's treatise was published for the first time in Venice in 1493, in a volume containing a rich group of Hermetic and Arabic writings, and which was followed by other editions in Venice 1519 and in Basel in 1533.

⁵ Cardano writes about his *Commentario* of 1554: "Quatuor libros hoc opus continet: in quo obscurissimum autorem interpretatus sum," *De libris propriis* (1557), in G. Cardano, *De libris propriis*, ed. by I. Maclean (Milan: 2004), p. 200.

of the immutability and inalterability of the future.⁶ Over the years, the many commentators on this long and difficult treatise attempted to make explicit and clear, in the most detailed possible way, the complex technical implications. Here we recall the late antique writings of Porphyry, Proclus and the Anonymous Greek; in the Arabic world, the commentary of Ali ibn Ridwan, an Egyptian doctor of the 10th century subsequently translated into Latin together with Ptolemy's own text; the commentary by the doctor and astrologer Conrad Hemgarter and that of Giorgio Valla, published in Lyon in 1502.⁷

The *Centiloquium* is a very different kind of work, a brief treatise containing a hundred aphorisms (hence its Latin title) attempting to encompass the fruit of Ptolemy's doctrine (hence its Greek title *Karpos* and Latin *Fructus*). Easily memorised in virtue of their conciseness (which in many cases does not exclude the obscurity of the dictum), the hundred aphorisms, translated into Latin even before the *Tetrabiblos*, had a very wide circulation. In the first aphorism, the author turns to Sirius, Ptolemy's brother, with whose name the major work begun: accordingly this led the tradition to identify also the second treatise as Ptolemaic. Actually, only a portion of the hundred maxims summarises the doctrine of the *Tetrabiblos*. Another part introduces Hermetic themes, from which Ptolemy had kept a distance: discussions of interrogations and elections, magical practices and decans. The discussions are no different from many other compilations from late Antiquity, except for the particular authority derived from their presumed Ptolemaic origin. The *Centiloquium* presents thus an eclectic astrology, in which Ptolemaic, Hermetic and Arabic techniques coexist, without bringing out the intricate differences between them.

The collection's origins are obscure. The fifth aphorism relates the position of the Moon at the moment of conception to the position of the Ascendant at the moment of birth, a theme commonly designated as "trinita Hermetis", absent from the *Tetrabiblos* but cited in the 5th century AD by Proclus who attributes it to Zoroaster, Petosiris and Ptolemy.⁸ This clue would give the text a Late Antique origin, and is corroborated, according to F. Nau, by a testimony from the erudite Syrian, Severus Sebokht, in the

⁶ Claudio Tolomeo, *Le previsioni astrologiche (Tetrabiblos)*, ed. S. Feraboli, (Milan: 1985).

⁷ *Praeclarissimi viri Georgii Vallae Commentationes in Ptolemaei Quadripartitum...* (Venice: 1502).

⁸ *Procli Diadochi in Platonis Rem publicam commentarii*, ed. W. Kroll, (Leipzig: 1899–1901), I. II, p. 59. note 4.

second half of the 7th century, who seems mention the *Centiloquium*.⁹ In the first years of the 10th century, Ahmad ibn Yusuf ibn al-Dayah gives an Arabic version of the text, entitled *Thamara* (fruit), attributing it to Ptolemy and supplying a commentary which will be translated into Latin, along with the one hundred aphorisms, by John of Seville, Plato of Tivoli, and Hugh of Santalla. The oldest Greek manuscripts of the *Centiloquium* date back to the 14th century. But their language belongs to a later period than Ptolemy, as Franz Boll conclusively demonstrated at the end of the 19th century. On this point, Richard Lemay has suggested that the work had been originally written in Arabic by Ibn al-Dayah and only subsequently translated into Greek. The author would have attributed the work to the Alexandrine scientist in order to increase its authoritative pedigree.¹⁰

The return to Ptolemy which is the great novelty of 16th century astrology, begins with new translations and commentaries of the *Centiloquium*. The first chronologically is by George of Trebizond, around the middle of the 15th century, subsequently published in 1540 by Luca Gaurico along with his *Oratio de Inventoribus, utilitate et laudibus Astronomiae*. The second translation was by Gioviano Pontano printed in Naples in 1512.¹¹ The new commentators, in no doubt about the work's authenticity, try to take him to the field of natural philosophy to which Ptolemy's major work referred; in so doing they played down the presence of the supernatural. Pontano, in particular, sought to show how the ninth aphorism, about the construction of magical images, could be referred to operations based exclusively on the natural properties of the elements.¹² The authenticity of the aphorisms was taken for granted. But cracks rapidly appeared to unsettle such a conviction with the new translations of the *Tetrabiblos*. In 1535, a version from the Greek of the first two books was published,

⁹ Cf. F. Nau, "Le traité sur les Constellations écrit en 661 par Sévère Sébekt," *Revue de l'Orient Chrétien* 27 (1929/30): 329.

¹⁰ R. Lemay, "Origin and Success of the Kitāb Thamara of Abu Ja'far Ahmad ben Yūsuf ibn Ibrāhīm," in *Proceedings of the first International Symposium for the History of Arabic Science, Aleppo 5–12 April 1976*, ed. by A.Y. Al-Hassan, G. Karmi, N. Namnum, vol. II (1978), pp. 92–99.

¹¹ Cf. *Claudii Ptolemaei Alexandrini astronomorum principis centum sententiae*, interprete Georgio Trapezunzio. *L. Gaurici Oratio de Inventoribus, utilitate et laudibus Astronomiae* (Rome: 1540); *Pontani Commentationes super centum sententiis Ptolemaei* (Naples: 1512).

¹² *Pontani Commentationes*, cit., I, IX, p. 384. An analysis of the text can be found in O. Pompeo Faracovi, "Le immagini e le forme. Pontano e il commento al nono aforisma del *Centiloquio*," *Bruniana e Campanelliana* 10 (2004), pp. 73–86.

translated by J. Camerarius. It was followed by the complete translation printed in 1548, by A. Gogava. The new editions, in particular the second, made it possible to read Ptolemy separately from the Hermetical interpretations and to measure all the better the distance between the *Tetrabiblos* and the *Centiloquium*.¹³ The physician, philosopher, mathematician and astrologer, Cardano, was quick to grasp such an increase of quality. He fell upon Gogava's translation by chance, in the midst of a long voyage to Scotland which took him to the sick-bed of the archbishop of Edinburgh, John Hamilton. Having immediately understood that the renewal of astrology depended on the recovery of the real Ptolemy, the Pavian scholar decided to write a new, precise commentary, which was published in 1554. He claimed that the *Centiloquium* was not a work by Ptolemy, but of someone else who had misunderstood and even deformed the Ptolemaic doctrine.¹⁴ He asserted the conjectural nature of the art of astrology, to be understood as a part of natural philosophy, and not as superstition, prophesising, magic, auguries, omens and such like.

Cardano began his long itinerary, as was usual, with learning the art in the Arabic version, which he got from his father, the jurist Fazio. From the outset he was critical of popular astrology, which he regarded as ignorant and unreliable. In his first astrological writings, he kept to the forms sanctioned by tradition, publishing, among others, a *Prognostic* for the years 1534 to 1550, as well as a collection of *Astrological Aphorisms* in seven books.¹⁵ Thus, for the young Cardano, the question of the certitude and truthfulness of prediction remained still unproblematic, taken from the Arab astrologers and works of Stoic inspiration. It was subsequently the direct reading of Ptolemy which convinced him about the conjectural nature of that portion of astrological predictions which referred more specifically to individual events. In his texts, where we find pages dedicated to the well-known and very controversial horoscope of Christ, we find this

¹³ *Cl. Ptolemaei libri quatuor composito Syro fratri; eiusdem Fructus librorum suorum, sive centum dicta ad eundem Syrum; traductio in linguam latinam librorum Ptolemaei duum priorum. . . . Joachimi Camerarii Pabergensis; conversio centum dictorum in latinum* Jov. Pontani; *annotatiunculae eiusdem Joachimi ad libros duos judiciorum Ptolemaei* (Nuremberg: 1535); *Cl. Ptolemaei Pelusiensis mathematici operis quadripartitii in latinum sermonem traductio, adiectis libris posterioribus Antonio Gogava Graviensi interprete* (Louvain: 1548).

¹⁴ *In Cl. Ptolemaei Pelusiensis IIII de astrorum iudiciis. . . libros commentaria*, III, 2, in G. Cardani, *Opera omnia*, ed. Ch. Spon (Leyden: Huguetan and Ravaut, 1663), vol. V, p. 356.

¹⁵ Both are available in Italian translations. Cf. *Astri e previsioni. Il 'Pronostico' di Cardano del 1534*, ed. G. Ernst, in *Girolamo Cardano. Le opere, le fonti, la vita*, ed. M. Baldi and G. Canziani (Milan: 1999), pp. 457–476; and G. Cardano, *Aforismi astrologici*, ed. G. Bezza (Milan: 1998).

conception connected with the more general thesis about the conjectural nature of all knowledge. Knowledge, for Cardano, comes by way of the deciphering of signs that reveal, obscurely, the hidden order which God has impressed on the world. On this point, which he owed to suggestions from Neo-Platonism, Cardano set himself apart, subtly and perhaps even unconsciously, from the Peripateticism of Ptolemy, to which, by contrast, the prevailing natural philosophy of the 'Ptolemaic' astronomers of the 16th and 17th century subscribed.

Cardano's commentary is the most authoritative among the many which the astrological culture of the first modern era devoted to Ptolemy, *astrologorum princeps*. Other commentaries, in the 16th century, are those by Philip Melanchthon, Valentin Nabod, Francesco Giuntini, and, in the middle of the 17th century, by Placido Titi. The return to Ptolemy was an essential vehicle of the movement of astrological reform, in which, between the 16th and 17th century, many illustrious names took part. Let us recall some of them: Pedro Ciruelo, the German astrologers connected to Melanchthon at the Wittenberg school (Peucer, Cario, Reinhold), and again Valentin Naboth, Johannes Schöner, Antonio Magini, Francesco Giuntini, Johannes Stadius, Heinrich Rantzau, Conrad Rauchfuss, Hieronymus Wolf, J. Garcaeus, Andrea Argoli, Placido Titi, Gerolamo Vitali, and many others. Their works used new and more accurate astronomic tables, from those compiled from the 15th century by Peurbach and Regiomontanus to those stimulated by the publication of the *De revolutionibus orbium coelestium* (1543) by Nicholas Copernicus such as the *Tabulae prutenicae* by Rheinold (1551) and the *Ephemerides novae* by Johannes Stadius, printed in Cologne in 1556.

It is worthwhile to reflect upon the relation between the astrology of the 15th and 16th centuries and heliocentrism. Contrary to what a number of historians have claimed,¹⁶ the spread of Copernicus' heliocentric theory did not occasion a crisis in astrology. "Reformer" astrologers precisely claimed to be disciples of the Ptolemy of the *Tetrabiblos*; but they took the new astronomy on board without difficulty, both in its Copernican and in its Tychonic versions. At the beginning of the 17th century, Thomas Campanella wrote, "whether the Sun moves or whether it stays put, we must in any case consider it as a mobile planet since we assume as a point of reference, our own senses . . . for it is the same, indeed, whether it

¹⁶ Cf. for a list of all of them F. Cumont, *Astrology and Religion Among the Greeks and Romans* (New York: 1912).

moves or whether it should be the Earth which moves".¹⁷ The astral charts represented the *sphaera mundi* and the planets from a terrestrial perspective, as they appeared from the Earth. As such, the representation was compatible either with the geocentric or the heliocentric systems. There was actually no contrast between astrology and "astronomical revolution". The proof of the matter is that the principle astronomers of the modern era, from Copernicus to Rheticus, from Tycho, even to Galileo, studied and practiced astrology. As for Kepler, the mark he left in the history of astrology is quite relevant. Sustained by a neo-Pythagorean vision which identifies in geometry a sort of archetype of the world, moulding natural reality, the German astronomer carried out an original revision of astrological techniques. He rejected the theory of the planetary "exaltations", considering it unjustifiable on the basis of geometry, and subsequently developed the theory of "aspects", in relation with the theme of musical harmony, introducing the study of the quintile, the biquintile and the sesquiquadrate.¹⁸

'Ptolemaic' astrology of the 16th century is tied to a philosophical background of Aristotelian stamp, acknowledging the capacity of the stars and the skies to influence terrestrial matter and cause natural effects of significance within the sphere of the living. The Sun warms and gives life, producing the alternations of the seasons. Together with the moon, it provokes tidal movements; it influences the processes of fermentation of the wine, and regulates the stages of childbirth. Also for the movements of other celestial bodies, and mainly of the planets, there are precise synchronised modifications. On the basis of such empirical regularities, observed and catalogued over centuries, astrologers formulate their predictions for the future. As J. Garcaeus writes, astrologers "derive their arguments from signs and natural causes, on which they base their predictions, which are ascertained and have certain effects, according to physical necessity, and not absolute necessity".¹⁹ Setting aside the *nugae* of the Arabs, an upshot also of an ingenuous trust in the completeness and ineluctability of predictions, there is no place for magical actions which presume to reach demonic or spiritual energies. Only natural magic is accepted, the result of knowledge of the natural properties of the elements. As Campanella emphasises, the operations he undertakes are just those precautions which

¹⁷ T. Campanella, *Astrologicorum libri septem*, I, 2, 1.3 (Frankfurt: 1630), p. 13.

¹⁸ Some developments of these themes are examined in my *Scritto negli astri. L'astrologia nella cultura dell'Occidente* (Venice: 1996).

¹⁹ J. Garcaeus, *Astrologiae methodus* (Basel: 1576), f. B2r.

any well-informed person might make to ward off malevolent influences and attract the beneficial ones. The influence of the stars operates on the human through the temperament of his humors, bodily constitution and moral inclinations, but does not take over reason and the will which are free to intervene and steer one's natural dispositions towards the one or the other direction.

Purified of superstition, magic and divination, the Christian astrology of the late Middle Ages insistently posed the question of free will. The model of universal determinism, dear to astrologers with Stoic tendencies, from Vettius Valens to Manilius and many Arab authors, is thoroughly rejected. Rather, full compatibility is found, with the Christian faith. Moments of accord with the tenets of astrology were noted in the writings of the Church Fathers: Albert the Great and especially Thomas Aquinas in relation to the theory of the astral inclination, utilized by Tommaso Buoninsegni against Girolamo Savonarola. Often a full accord is noted between astrology and theology. The title of a work by Pedro Ciruelo is indicative of this tendency: *Apotelesmata astrologiae Christianae nuper edita a magistro Petro Ciruelo Darocensi super duarum tantum iudiciorum partibus hoc est de mutationibus temporum et de genituris hominum reiectis omnino interrogationibus et vanis electionibus falsorum astrologorum* [= *Apostel-mata of Christian astrology on the two parts of judicial astrology, that is, on weather prediction and human genitures, rejecting all the interrogations and vain elections of the false astrologers*].²⁰ Moreover, in the beginning of the modern era, a certain number of popes thought well of astrology and protected it. Already, towards the end of the 15th century, Sixtus IV had introduced the teaching of astrology in the Roman university, appealing to the scholar and editor of Manilius, Lorenzo Bonincontri. Paul III was so pleased with the predictions of Luca Gaurico, who had predicted his papacy, that he conferred upon the Campanian astrologer the title of bishop of Civitate. A century later, and in a rather less propitious cultural climate, Urban VIII did not scorn to appeal to the renowned astrological competence of Campanella, in order to make light of the obscure predictions about his looming death, widely circulating in Rome.

²⁰ (Madrid: 1521). But see also C. Gigante, "Un interprete cinquecentesco della polemica antiastrologica di Savonarola: Tommaso Buoninsegni," in *Nella luce degli astri. L'astrologia nella cultura del Rinascimento*, ed. O. Pompeo Faracovi (Sarzana: 2004), pp. 101–117.

As we saw in reference to Kepler, the specialist's mathematical and naturalistic interpretation of astrology, reformed though the return to Ptolemy which was gaining ground, does not exhaust the panorama of the astrological production of the 16th and 17th centuries. We have mentioned the widespread dissemination, made easier through printed editions, of the annual prognostics, but alongside these, other forms of popular astrology must be mentioned, such as lunar calendars and almanacs and the widespread usage of printed engravings representing "the sons of the planets", i.e. the social and professional categories placed under the domination of one or other of the planets.²¹ At a higher level, the attempt to extract from celestial signs the prediction of large scale natural, or historical events did not refrain from a renewed use of the theory of the great conjunctions, absent from classical astrology but very much celebrated in the late Middle Ages, especially in the version given by Albumasar. This theory played a role, for example, in the long discussion in which Philip Melanchthon and Luca Gaurico participated, over Luther's horoscope. The reformist monk was presented by the Catholic astrologer as the incarnation of the Antichrist, which supposedly had been announced by the conjunction of Jupiter and Saturn in Scorpio in 1484, both present with other three planets in the ninth house of Luther's horoscope.²² The theory also played a role in the late 16th century predictions by Tycho on the coming accession of a Northern prince, whose destiny was to dominate Europe—predictions which were to rise to renewed fame in 1632, at the height of power of Gustavus Adolphus of Sweden.²³ In works such as the *De occulta philosophia* by Cornelius Agrippa, and works by Michel Nostradamus, astrological techniques were reconnected to magical and divinatory practices on the basis of an argument already put forward by the greatest Arabic language handbook of magic, the famous *Picatrix*: only the astrological examination of the sky can furnish the magician with the exact indication of the propitious times in which to carry out his operations. The contrast between this tendency and the "Ptolemaic" tendency did not fail to come to light:

²¹ On this point see D. Blume, *Regenten des Himmels. Astrologische Bilder in Mittelalter und Renaissance* (Berlin: 2000).

²² On the whole question, cf. the classic A. Warburg, "Divinazione antica pagana nell'età di Lutero," in *La rinascita del paganesimo antico. Contributi alla storia della cultura*, ed. G. Bing (Florence: 1966), new ed. *La rinascita del paganesimo antico e altri scritti* (1889–1914), ed. M. Ghelardi (Turin: 2004), pp. 313–390.

²³ Tycho's prediction can be read in T. Brahe, *Astronomiae instauratae Progymnasmatum pars tertia*, in *Opera omnia*, ed. J.L.E. Dreyer, vol. 3 (Copenhagen: 1916), p. 308 sgg.

in France, for example, astrologers influenced by Melanchthon and his school vivaciously attacked Nostradamus and his methods. The difficult comparison of these profoundly different directions was undertaken but a few years later, in one of the *Dialogues philosophiques* by Pontus de Tyard with the problematical *Mantice. Discours de la verité de divination par astrologie* (1577).²⁴

²⁴ Cf. L. Videl, *Declarations des abus, ignorances et seditions de Michel Nostradamus de Salon de Craux* (Avignon: 1558); P. de Tiard, *Mantice. Discours de la verité de divination par astrologie* crit. ed. by S. Bokdan (Geneva: 1990).

CHAPTER FOUR

THE THEOLOGICAL DEBATE

Graziella Federici Vescovini

Introduction

The astrologers of Antiquity were commonly known as the “divines” according to the definition in the *Etymologiae* of Isidore of Seville (560–636) drawing upon a theme of Plato’s *Phaedro*. They were called this because they were “diviners” inspired by the gods, as Plato had defined them when speaking of amorous mania and madness or divine furor which possessed the soothsayer when telling the future. Thus any prediction, including those made on the basis of the stars, was regarded as being made with the intervention of the divinity, which “inspired” the diviner, and was therefore on a par with what the religions called prophecy. From this tradition a close connection was conceived between astrological prediction, “divination” and prophecy. Astrology thus came to be concerned also with religion, or rather all the religions revealed in the Book according to their historical events narrated in the Old and New Testament or in the Quran.

In the classical world Cicero classified two types in his *On Divination*: one as an art (*ars*), which is artificial and concerns the interpretation of signs, the second as furor (*furor*) which is that divine possession permitting the divination allowed by the gods to human nature when in a particular state of exaltation.

Cicero however discredited astrology and its prognostications and this devaluation was developed with religious and philosophical argumentations by St Augustine and accompanied the positions of many medieval philosophers and theologians through the Renaissance, leading to the celebrated condemnation by Giovanni Pico della Mirandola in his *Disputationes adversus astrologiam divinatricem* (1493–94), which nonetheless did not bring about astrology’s demise. Indeed, in its defence there were the famous *Defensiones* of Lucio Bellati against Pico, taken up again by Giovanni Pontano in the *De rebus caelestibus* and developed by him in his comment on the Pseudo-Ptolemaic *Centiloquio*, as well as Gabriele Pirovano’s

attempt to construct a Christian astrology.¹ Pico's condemnation stemmed from religious issues as well as moral and philosophical ones, since in his view the determinism that lay at the base of stellar causality would deny the principle of liberty. These critiques obviously intended to deny the connection between astrology, religion and morality that had been theorized by medieval theologians and philosophers. In fact, in their defenses against Pico, both Bellanti and Pirovano merely tied into the tradition of scholars, theologians and philosophers of previous centuries, including, among the Jews, Abraham bar Hiyya (Savasorda) and Abraham ibn Ezra (Abenezra), and among the Latins, pseudo-Ovid (Peter of Limoges), Roger Bacon, Ramon Llull, Albertus Magnus, Thomas Aquinas and all the others who had divided astrological prediction, a merely physical and natural discipline like geography, medicine and meteorology (according to the interpretation of the *Tetrabiblos* of Ptolemy who was the founder), from eschatology, prophecy, messianic announcements and predictions about the end of the world. These latter were themes which regarded God's Providential plan and the transcendent destinies of humanity. The accusation of determinism was deflected by the doctrine that the stars do not cause by necessity but by "inclination," since God acts on our natural dispositions through the planets. They are instrumental causes, and therefore secondary, which move only the body and do not constrain the soul. Roger Bacon,² a proponent of this type of reasoning, sustained that such arguments demonstrated that astrology was not in conflict with human liberty, and he went so far as to justify the casting of horoscopes of various religions. According to him, the astrological vision of the world did not imply any necessity in the human affairs described in the Bible's narration of world history when these happened to be determined by the great conjunctions. In fact, the natural astrology of Ptolemy's *Tetrabiblos*, oriented more toward prognostications about the lives of individuals and less interested in foretelling universal events such as the appearance of the great

¹ Compare Ornella Pompeo Faracovi, "In difesa dell'astrologia. Risposte a Pico in Bellanti e Pontano," in *Nello Specchio del cielo, Giovanni Pico della Mirandola contro l'astrologia divinatoria*, M. Bertozzi ed. (Florence: 2008), pp. 47–65, in part. pp. 64–66; see also my study "Note al commento ad alcuni passi del Libro di Pittura: 'L'astrologia che nulla fa senza la prospettiva'," in *Leonardo e Pico, analogie, contatti, confronti*, F. Frosini ed. (Florence: 2005), pp. 99–129, in particular pp. 125–126. About this, more later.

² Roger Bacon, *Opus maius*, Pars IV *de iudiciis astronomiae*, ed. J.H. Bridges (London: 1897–1900); A.G. Little, *Roger Bacon Essay: on the Seventh Century of his Birth* (Oxford: 1914), pp. 16–19), 39–40, 53–54; J. Hackett ed., *Roger Bacon and the Sciences, Commemorative Essays* (Leiden: 1997).

religions, became contaminated, across centuries of interpretation, by elements of Oriental, Indian, Persian and Babylonian astrology, from the 8th to the 11th centuries.³ Some of these were re-elaborating the *Tetrabiblos* to formulate a worldwide astrology, according to which the formation of religions, the rise and fall of kingdoms and empires, the repopulation of the land, and the floods, were the major themes, viewed in the context of the great planetary revolutions. With Ptolemy, astrological technique becomes removed from the soothsayers and strictly connected to the philosophical reflections of Aristotle regarding celestial and terrestrial physics. Thus, discussion regarding the computation of the epochs indicated by the prophets in sacred history, according to the spiritual meaning of prophecy, tended to give an entirely figurative meaning to the end of the world and to time as discussed in the Scriptures, such as the moment of the Redemption of Israel by the Jews, the arrival of the Antichrist for the Christians, or the destruction of the religion of Muhammad for the Muslims. Philosophers and scientists of the three monotheistic religions lacked a scientific confirmation of their sacred histories; and this they sought in the mathematical models of Ptolemy's astronomy/astrology. They posed the problem of the intelligibility of the story revealed in the Book, as projected into the future of the prophecies. Thus emerged the conviction that such an intelligibility might be possible by reading the passage of secular time as marked by the transits of the celestial bodies to which the divine events would correspond. The history of the world with its various events will be explained by the universal rhythm of the great events according to the succession of the transits of the slow and fast planets or the apparitions of the great or small planetary conjunctions or by eclipses. Thus the celestial vault measures not only the passage of terrestrial time but also the great events of Sacred History in the past, present and future. The histories of people and religions, based on God's plans, which are inscrutable and invisible in themselves but which can be detected in the prophecies, can be interpreted in signs that God Himself impressed on the heavens when he created the firmament. A common inclination among the learned of the three religions was to read in the skies the future of the extraordinary events of their religions, and therefore in the 13th century, in the time of Roger Bacon, the Christians feared the coming of the Antichrist, whereas the Arabs feared the invasion by the

³ F. Boll, *Sphera, Neu griechische Texte und Untersuchungen zur Geschichte des Sternbilder* (Leipzig: 1903).

pagans which would destroy their people and the religion of Muhammad, and the Jews awaited their Redemption.

The astrological theory of the great conjunctions seems to have appeared in the Sassanid period, when the faithful of all the religions practiced in the Empire lived in the more or less imminent anticipation of the end of the world. This astrological conception of the world was also in tune with a passage in the *Timaeus* (39, D) where Plato develops the theory of a return of all the planets to the same degree (called the theory of the Great Year or the Perfect Year), a doctrine that gave rise to the idea of the more or less catastrophic pluriennial heavens of the universe. The problem of the cosmic order was connected to the scientific determination of the succession of time read by the astronomers in the celestial motions.

Until the 16th century and Galileo's renewal of astronomy, many of the astronomers of the previous centuries were very expert mathematical astrologers, and astrology and astronomy were synonymous. This does not include the Christian peripatetics, exponents of scholastic theology in the 14th century, such as Thomas Aquinas, who were faithful to Aristotle's *De Caelo*, and found there nothing about astrological technique but only a generic principle for the generation of the forms. The principal founders of this astronomy-astrology relied less on Aristotle than on Ptolemy's *Almagest*, which gave the foundations for the astrology of the *Tetrabiblos*, re-elaborating a more refined and complex technique with respect to this work, while contaminating it with the Eastern Indian and Persian astrological techniques. Examples were Mashallah, an Arabic-speaking Jew, and the somewhat younger Albumasar.

1. *The Sources*

These thinkers elaborated a world astrology with the complex theory of the great planetary conjunctions, also called the Revolutions of the years of the world, which had at its center the explanation of the birth and death of kingdoms and especially of religions, cataclysms, and universal floods. Their conjunctionist theory produced numerous commentaries and interpretations, but some of the learned among the three religions appropriated the techniques in order to anticipate the future announced in prophecies (although they were strongly opposed by the doctrinal authorities in their religions).

a) *Mashallah (Māša'allāh ibn Atharī)*

Mashallah, an Arab-speaking Jew active under al-Mansur e al-Mamun, (circa 770–815),⁴ composed a work, *The Great Conjunctions, Nations, and Peoples*, which the Latins knew mainly by way of another writing of his, the *Letter Concerning Eclipses*,⁵ translated in 1148 by John of Seville into Latin from a Hebrew version. This work enjoyed extraordinary success, as may be seen also from the numerous editions of it made in the Renaissance.

His theory of the Great Conjunctions,⁶ on the technical side, is different from Albumasar's, although the theoretical basis is the same. He tries to integrate the Sassanid theory of the cycles of the time of the world within the world astrology of Ptolemy, completing the latter without contradicting it. He gives much importance not only to the conjunctions of the superior, slower planets (Saturn, Jupiter and Mars); but unlike Albumasar he also features the inferior faster ones (Mercury, Venus, and the Moon—considering the “luminary” in this case to be a planet) associated with the Sun and therefore with the eclipses of the two “luminaries” (i.e., Sun and Moon). He puts these transits in relation to the different regions of the world, thus introducing also an astrological geography. Mashallah does not introduce a calculation of the triplicities, such as Albumasar later will, although he knows about them. Therefore he does not indicate the periods of the greatest, greater, medium, and small conjunctions. Albumasar would indicate these periods according to the periods of the triplicities, which he gives as 20, 120, 240 and 960 years—the latter being the greatest conjunction, approximating the millennium. Thus the definition of greatest, greater, medium, and small varies depending on whether the reference is to a conjunction of Saturn and Jupiter within the same triplicity or to the passage into a new triplicity according to these established periods. The maximum is always 960 years, indicating practically the millennium. Now, according to Albumasar, the great changes in religions and peoples took place after a succession of 12 conjunctions of Jupiter and Saturn, which occur every 20 years (so that the entire succession equals 12×20 , i.e., 240 years). Therefore the beginning of the next major

⁴ F.J. Carmody, *Arab Astronomical and Astrological Sciences in Latin Translation* (Berkeley and Los Angeles: 1956), p. 23.

⁵ F.J. Carmody, *op. cit.*, p. 31; B. Goldstein, “The Book on Eclipses of Mesha'allah”, *Physis*, 1964, pp. 205–213.

⁶ E.S. Kennedy, D. Pingree, eds., *The Astrological History of Masha'allah* (Cambridge Mass.: 1971).

conjunction after the passage of a successive triplicity following the sequence of passage through the triplicities of each of the four elements, i.e., from fire back around again to fire, which was the great conjunction, could be called greatest, the preceding one small, and the intermediate ones, medium. "Great conjunction" referred in general to conjunctions involving the superior planets (Saturn, Jupiter and Mars), "medium" to those of Mars, and "small" to those of the fast planets, associated with the Sun, as Mashallah had asserted according to the testimony of his disciple Shādhān (see below). There was a notable variety in the meanings of these terms, although for the most part by great or major was indicated the conjunction of the three superior planets (which only indicated the millennium in this case), by small was indicated that of the faster lower planets, by medium was indicated that with the periods of motion in between the fast planets and the slow ones, an example being Mars.

b) *Albumasar*

Mashallah and especially Albumasar introduced the idea of the horoscope of religions; and their doctrine would have a great influence to the end of the 17th century.

Albumasar or Abū Ma'sar ibn Muḥammad al-Balkī (Hurasan 786–Bagdad 886), was the most famous astrologer of the Arab-Latin world until the modern period. His major works known in translation to the Latins were the *Introductorium maius in astronomiam* or *astrologiam* (the two disciplines were synonymous at that time) in eight books. It had two different translations in the same years (one by Johannes Hispalensis and the other by Herman of Carinthia). He composed the *De magnis coniunctionibus* in eight books and a shorter work, translated by Adelard of Bath and known as *De revolutionibus annorum mundi* or *De mundo: Isagoga Japharis in astronomiam*. But many extracts of these works circulated anonymously. The *De magnis coniunctionibus* is a mature work,⁷ redacted between 861 and 866 and it takes up and elaborates the central ideas of the main treatise, i.e., the *Introductorium*.⁸ It is a general treatment which in a more synthetic form (i.e., the *Introductorium minus*, also called the

⁷ Abū Ma'sar, *On Historical Astrology. The Book of Religion and Dynasties (De magnis coniunctionibus)*, Latin text, ed. Ch. Burnett, Arabic-latin, Latin-arabic Glossaries, ed. K. Yamamoto and Charles Burnett (Leiden: 2000), 2 vv.

⁸ Albumasar, *Introductorium maius in astronomiam*, Augusta, E. Ratdolt, 1485; Latin and Arabic text, ed. R. Lemay (Naples: 1995), 9 vv.

Ysagoga Alcabitii referring to Alcabitius or al-Qabīṣī, who died around 967 and had been active in Mosul), translated by Johannes Hispalensis in the first half of the 12th century, constituted the main astronomy textbook in the European university faculties of arts, philosophy and medicine, throughout the 14th and 15th centuries, also in vernacular translations.⁹ At that time the basics of Ptolemaic astrology, transmitted by way of the commentaries by Arab astrologers, were the main pillars of instruction in medicine and in natural philosophy or *physis*. To accompany his first work introducing astrology, Albumasar in the *De magnis coniunctionibus* developed an idea that had been discussed before him by Mashallah, concerning the astrological revolutions of the world upon which depends the rise of kingdoms and empires as well as the depopulation of lands through floods and the birth of religions. The appearance or disappearance of these great universal events was seen to relate to the transits of the major planets, the slowest being Saturn and Jupiter, when they came in conjunction with the faster ones, Mars, Mercury and Venus, marking roughly the passage of a year, twenty years, a century and a millennium. In other words the horoscope of the world events described in histories of the world depends on the corresponding “conjunctions,” and for this reason this particular astrological doctrine is known as “conjunctionist.”

2. *The Conjunctionist Theory*

It is based on the idea that the conjunctions of Saturn and Jupiter occur successively in the different signs of the same triplicity at the rate of 12 conjunctions for each triplicity, which after four cycles of 12 conjunctions would bring the two planets back to the point of origin of the revolution, fixed at zero degrees of Aries as I noted above. Mashallah had set out the definitions of great, medium and small conjunctions, as well as of triplicity, without however joining the latter concept to the former.

⁹ G. Federici Vescovini, *I programmi degli insegnamenti del Collegio di Medicina, Filosofia e Astrologia dello Statuto dell'Università di Bologna del 1405*, in J. Jamesse, ed., *Roma magistra mundi*, Mélanges offerts à Père L.E. Boyle, t. I (Louvain la Neuve: FIDEM, 1998), pp. 193–223; concerning the French translation of Alcabitius, cfr. E. Poulle, *Horoscopes princiers des XIV^e et XV^e siècle*, in id., *Astronomie planétaire au Moyen Âge latin*, Variorum Reprints (Aldershot: 1996), VIII, pp. 63–64; R. Lemay, “The Teaching of Astronomy in Medieval University, Principally at Paris,” *Manuscripta* 20 (1976), pp. 280–315. Alcabitius' work was printed in Bologna in 1473, in Venice in 1481 and in successive editions to 1586. See F.J. Carmody, *Arabic Astronomical and Astrological Sciences in Latin Translation* (Berkeley and Los Angeles: University of California Press, 1956), pp. 146 and ff.

Albumasar's contribution was to articulate the connection. Two planets are in conjunction when they have the same longitude, whatever might be their latitude. Triplicity (*triplicitas*) is the Latin translation of *trigona* or *triquetra*, terms that indicated the harmonic aspect between signs of the same element, considering that the signs were subdivided according to the four elements: fire, air, water, earth.¹⁰ Thus the triplicity of fire included Aries, Leo, Sagittarius; of air, Gemini, Libra, Aquarius; of water, Cancer, Scorpio, Pisces; of earth, Taurus, Virgo, Capricorn. The twelve signs were then divided into four equilateral triangles and the two major planets Jupiter and Saturn presided as Lords (*Domini*) over each triangle, and to them was joined a third faster planet as a companion (*socius*) according to the theories of a planet's exaltation, house and fall.¹¹ These last doctrines were variously elaborated by Mashallah, Al Kindi, Albumasar, Alchabitius and other Arab and Medieval Latin astrologers, not always in agreement among one another.¹²

These doctrines were also re-elaborated by the greatest Jewish astronomers of the 12th century, namely, Abraham bar Ḥiyya (Savasorda) and Abraham ibn Ezra (Abenezra) in their works entitled *De magnis coniunctionibus*, which were known through the translations by Henry Bate of Malines and Pietro d'Abano. These works contributed to stimulating lively discussions in the Renaissance.

Uniting the succession of the triplicities with the succession of the conjunctions is a complicated matter. It was one of the principle innovations introduced by Albumasar with respect to the simpler theory of Mashallah, who did not join the complicated calculations due to the passage of the triplicities from one to the other, with the simpler calculation of the planetary revolutions and conjunctions.¹³ Thus when the transits of the great conjunctions of Saturn and Jupiter in all four of the triplicities are completed and the planets return to zero degrees of Aries in the triplicity of fire, we have the maximum conjunction (*fortis* this was called

¹⁰ Albumasar, *Introductorium maius*, libro V, diff. XIII "in dominis triplicitatis", ed. Lemay, vol. V, pp. 200–201.

¹¹ Concerning this, C. Nallino, *Albattani sive Albategni Opus astronomicum*, Milano (Pubblicazioni del Regio Osservatorio di Brera, XV), 1903, Introduzione, vol. I.

¹² Compare C. Nallino, *ibid.*

¹³ Concerning the testimony of Abu-Sa'id Shadhan b.Bar, a disciple of Albumasar, in regard to a particular theory of Mashallah on the small conjunction see Sadan (Shādhān), *I segreti astrologici di Albumasar*, Italian translation by G. Federici Vescovini (Torino: Aragno, 2000), p. 79 (Latin text edited by the same in *Archives d'histoire doctrinale et littéraire du Moyen Âge* 65 (1988): 297–330).

by the great early 12th century astrologer, mathematician and philosopher Abraham Savasorda (i.e., Abraham bar Hiyya) in his work of world astrology entitled *Liber rivelator*).¹⁴ Supposing that twenty years pass between two successive small conjunctions, there is given the rule of astronomical appearances to determine the millennium, which is the interval taken by the conjunctionists as the unit of measurement. From this universal astrological doctrine arises a conception of world history based on the revolutions of the planets, a linear history divided by planetary transits, which characterized the outlook throughout the Renaissance, up to the astronomical revolution of Copernicus and Galileo. This astrological view of history was an attempt to build a bridge between sacred and profane history, between theology and history and between natural philosophy and history.¹⁵ A theocentric conception of astrological history thus emerged.

3. *The Theocentric View of Astrological History*

Some scholars posed the problem of the intelligibility of biblical history in its projections toward the future announced in the prophecies. Not only Christians but also Jews, especially in the first centuries but also later (as Giambattista Bernardo de Rossi narrates in his *Trattato della vana aspettazione degli Ebrei del loro Messia*), awaited the arrival of their Messiah.¹⁶ The conviction took root that this intelligibility was possible by reading the passage of time measured in the celestial vault by the transits of the stars corresponding to the divine events. The celestial vault, according to this view, measures not only the passage of earthly time but also the great events of sacred history—past, present and future—which may be foreseen by astronomical calculations. A theocentric conception of astrological history thus arises, because the astrological event is conceived as

¹⁴ J. M. Millás-Vallcrosa, *La obra enciclopédica di R. Abraham bar Hiyya*, in *Estudios sobre Historia de la ciencia española* (Barcelona: 1949), pp. 219–62. Millás-Vallcrosa translated the text from Hebrew into Spanish. J. Guttmann, “Ueber Abraham bar Chijja Buch der Enthüllung,” *Monatschrift für die Geschichte und Wissenschaften des Judentums*, Breslau 47, 1903, p. 551. Compare ora C. Sirat, *History of Jewish Philosophy in the Middle Ages* (Cambridge: 1986), pp. 97–112.

¹⁵ K. Pomian, “Astrology as a Naturalistic Theology of History,” in “*Astrologi allucinati*. Stars and the End of the World in Luther’s Time (Berlin – New York: 1986), pp. 38–43; T. Gregory, *Temps astrologique et temps chrétien*, in J.M. Leroux, *Le temps chrétien de la fin de l’Antiquité au Moyen Âge* (Paris: 1984), pp. 557–73.

¹⁶ Giambattista De Rossi, *Della vana aspettazione degli Ebrei del loro Messia Trattato* (Parma: 1973), on Abraham, p. 129.

being closely connected with its supernatural counterpart, based on the presupposition that the designs of God, His Providence, can be read in the skies, and thus terrestrial outcomes are indissolubly connected to the divine plan by a secular and spiritual link. This conception was nonetheless opposed on two fronts: by the supporters of a purely secular history to which Albumasar's horoscopes of religions could be applied, as well as by those who, like St Augustine and his followers, viewed the matter in a rigorously theocentric and sacred sense, detached from the contingencies of earthly events. The notion that there were six sects or religions also derived from Albumasar's theory of the great conjunctions.

4. *The Six Religions*

Albumasar dedicates his first treatise to explaining the birth of the prophets and religions according to the universal motion of the great conjunctions regarding the three superior planets just mentioned: Saturn signifies misfortune and hardness, Jupiter signifies laws, decrees and justice, Mars is wars and victories, and the three inferior planets signify as follows: Venus, marriages; Mercury writing and counting; and the Moon (the third planet which succeeds all the others, the "*planetam tertium succedentem*")¹⁷ signifies travel, movements, increases and decreases. All are associated with the Sun. These are the general principles of the universal conjunctions. These conjunctions begin from the revolution of the year in which there is the conjunction of the three superior planets (Saturn, Jupiter and Mars), which occurs every 960 years circa. This is the greatest conjunction. Therefore, from these six beginnings or foundations (*principia*), are drawn (*accipiantur*) "the things (*res*) or principles whereby the foreknowledge of the universal effects and their particularities in future times."¹⁸ The computation begins with this greatest millennial conjunction; next we calculate the moment of the triplicity of the two superior planets (Jupiter and Saturn, Jupiter and Mars) which occurs every 240 years, obtained by multiplying twelve conjunctions by each triplicity, which changes every 20 years and therefore equals 240. Since Jupiter signifies faith and changes in religion according to whether it joins with Saturn or the other planets, the result will be that if Jupiter joins with Saturn we will have Jewish reli-

¹⁷ Albumasar, *De magnis coniunctionibus*, Tract. primus, diff. prima, in the cited edition, p. 8.

¹⁸ *Op. cit.*, loc. cit., p. 8.

gion, if with Mercury, Christian religion, if with Venus, Saracen religion. Concerning the other religions, Albumasar does not indicate the name of the pagan population which practiced the cult of fire, governed by the conjunction of Jupiter with Mars, or the idolaters who practiced the cult of the stars governed by Jupiter and the Sun. And if Jupiter joins with the Moon this will signify instability in the previous religion and its possible decline, but Albumasar does not furnish any precise indication about this event.¹⁹ Whereas in this first treatise he speaks generically about the birth of the Christian religion by the union of Jupiter and Mercury,²⁰ in the *Introductorium maius* (Great Introduction) he gives us a horoscope of Christ with the ascendant in Virgo. This will be the basis for heated discussions among the Latin interpreters, who accept this doctrine with due precautions. Albumasar writes: "And there rises a child in the first image of that sign (Virgo) [...] And this is a beautiful virgin, full of dignity and grace, with long hair, comely to the eye, splendid in appearance, holding two ears of wheat; she sits upon a throne covered [by a cloth] and feeds a baby in a place called Abrie. And a certain people call this child Jesus, which in Arabic is Elice."²¹

But the most heated discussion, besides that regarding the horoscope of Christ, regarded the identification of the sixth religion that would signify the destruction, disappearance or transformation of the preceding one, due to the conjunction of Jupiter with the Moon.

5. *The First Interpreters of the 13th Century*

The first systematizers of Christian thought, i.e. Isidore of Seville, Domenico Gundissalvi and Hugh of St Victor, in their elaborations of the liberal arts, had separated astronomy from divinatory astrology, branding the latter as superstitious. Furthermore, the condemnations of 1270 and 1277 by the Bishop of Paris, Etienne Tempier, especially articles 68, 70, 76 and 94,²² reprehended necessitarianism in respect to the celestial machine. Therefore there were few supporters of Albumasar's theory of great conjunctions,

¹⁹ *Op. cit.*, Tract: primus diff. quarta, pp. 29–30.

²⁰ *Op. cit.*, loc. cit. p. 28.

²¹ Albumasar, *Introductorium maius*, Tract VI, diff. 1, *Facies Virgo*, ed. cit., vol. V, p. 224. There is an analogous reference in Pseudo-Albertus Magnus, *Speculum astronomie*, ed. Zambelli et alii (Pisa: 1977), pp. 36–37.

²² R. Hissette, *Enquête sur les 219 articles condamnés à Paris le 27 mars 1277* (Louvain – Paris: 1977), pp. 120–21, 136, 163.

as it was known by way of the Arabic-Jewish-Latin translations of the two Abrahams (previously mentioned) as conveyed by Henry Bate of Malines and Pietro d'Abano, with some French intermediaries.²³ This conjunctionist theory, condemned indirectly as an error by the Latin doctrinal authorities in the 13th century, was in fact in circulation in the work *De vetula* by pseudo-Ovid (now considered to be by Richard de Fournival),²⁴ in the *De causis et proprietatibus elementorum* of Albertus Magnus and in the *Speculum astronomiae* which the tradition of his time attributed to Albertus Magnus but which is now regarded as being of doubtful attribution.

The two Abrahams were always mixed up until Giovanni Pico della Mirandola finally distinguished them.²⁵ These authors introduced some changes to Albumasar's original doctrines in their expositions of them, nonetheless keeping the horoscope of Christ with the ascendant in the sign of Virgo. And their theories constitute the doctrinal references in the circulation of the discussions especially regarding the horoscope of Christ and the Antichrist which took place among Renaissance philosophers and theologians such as Pierre d'Ailly, Marsilio Ficino, Luca Gaurico and Girolamo Cardano, just to mention the major ones.

The doctrinal justification brought to bear for the acceptance of the theory of the great conjunctions, accepted until the end of the 17th with many reservations, was elaborated in the work cited above, the *Speculum astronomiae* of pseudo-Albertus, which distinguished the permitted from

²³ L. Thorndike, "The Latin Translation of the Astrological Tracts of Abraham Avenazre", *Isis* 25, 1944, pp. 293–301. According to the manuscripts in Paris, BnF, français n. 1351 e n. 24276, cited by G. Wallerand ed., Henri Bate de Malines, *Speculum divinorum et quorundam naturalium* (Louvain: 1931), the translation was made by Obert de Montdidier dictating in French from the Hebrew of Hagins. The same indication comes from the important codex of Limoges, Bibl. Communale, n. 9, siècle XIV which contains also the *De luminaribus* of Abraham translated by Abenezra, dated 1272. Concerning Hagin or Hayyim, see P. Paris, *Histoire littéraire de la France*, vol. XXI (Paris: 1912), pp. 441–503. For the translation by Pietro d'Abano of Abraham Abenezra, also from French, see G. Federici Vescovini ed., Pietro d'Abano, *Lucidator dubitabilium astronomie e altre opere*, now in Pietro d'Abano, *Trattati di astronomia*, 2 ed. (Padua: 1992), Introduction, p. 95. Also the *De redemption Israel* by Abraham Savasorda was translated from French, by the Dominican Theodorico of Northen or Northem. Compare n. 51 below.

²⁴ For the attribution to Richard de Fournival as author of the *De vetula* see B. Roy, "Richard de Fournival, auteur du *Speculum astronomie*," *Archives d'histoire doctrinale et littéraire du moyen âge* 67, 2000, pp. 166–167 which attributes to him also the *Speculum* due to the statement that the author of the *Speculum* must have been a surgeon. A. Paravicini Bagliani attributes it instead to Campanus of Novara. P. Zambelli considers legitimate the attribution to Alberto on the basis of tradition. See note 26.

²⁵ Giovanni Pico della Mirandola, *Disputationes contra astrologiam divinatricem* (Bononie: 1496), II, 5. Compare n. 71 below.

the non-permitted books (*De libris licitis et illicitis*). Accordingly, the doctrine of images allowed the astronomical books included by Ptolemy, and excluded books on necromancy and ceremonial magic based on abominable and detestable theurgical, Hermetical and Jewish magic.²⁶

6. *The Identification of the Sixth Religion: the End of the Religions and the Peoples, or the Rebirth*

a) *Roger Bacon and the Advent of the Antichrist*

Roger Bacon was one of the staunchest defenders of the theory of the birth of religions brought about by the great conjunctions. He got from Albumasar the doctrine of the horoscope of Christ with the ascendant in Virgo. Among the Muslim population, the sixth sect, not yet manifested, was identified by some interpretations with that of the idolaters and pagans. This last would prefigure the fall of Muhammad according to Albumasar, and according to the Jewish thinkers, the salvation of Israel. For the Latin followers of this doctrine, such as Bacon, the last sect would announce the arrival of a malicious man, the Antichrist, dedicated to destroying Christianity.²⁷ The sect would be manifested by the transit of the conjunction of Jupiter, Saturn and Mars with the Moon in the triplicity of the earth of Capricorn, as the scientist-astrologer Peter of Limoges apparently noted in a sermon he supposedly gave, called *De Antichristo*, dating to 1260–61.²⁸ Bacon considered that this astrological doctrine was particularly useful since predicting the arrival of the Antichrist could help the Latins prepare to combat him. The ascendant in Virgo of Christ's horoscope, as indicated by Albumasar, constitutes for Bacon a proof of the rational and divine character of Christianity,²⁹ because Mercury in Virgo signifies prophecy and rational faith and indicates writing, eloquence and knowledge. Therefore this religion will always remain solid, although it can be subverted by the arrival of the last *lex*, the sixth, signified by the conjunction of Jupiter and the Moon. This would indicate for Christians

²⁶ P. Zambelli, *The Speculum astronomie, Enigma, Astrology, Theology and Science in Albertus Magnus and his Contemporaries*, tr. Charles Burnett (Dordrecht—Boston: 1992), chap. X (first ed. Pisa: 1977, pp. 28–33).

²⁷ J. North, "Roger Bacon and the Saracen," in G. Federici Vescovini ed., *Filosofia e scienza classica arabo-latina medievale e l'età moderna* (Louvain la Neuve: 1999), pp. 129–160.

²⁸ Compare N. Beriou, "Pierre de Limoges et la fin des temps," *Mélanges de l'École française de Rome* 98 (1986): 65–107 (text, pp. 96–102).

²⁹ On this, in particular J. North, "Roger Bacon and the Saracen," *op. cit.*, pp. 149, 151.

the arrival of a terrible enemy who could destroy their religion, the Antichrist, and for the Arabs, a ferocious warrior who could destroy theirs. The peoples of the six religions are indicated in the *Moralis philosophia* as 1) the Saracens (Muslim), 2) the Tartars (pagan), 3) the idolaters, 4) the Jews, 5) the Christians, and 6) the destroyers of the Christian religion by the arrival of a warrior, who would be the Antichrist. Just as for Albu-masar, so also for Bacon, the six depend on the conjunctions of the six planets, since Sun and Moon are associated with Jupiter, wherefore the arrival of the Antichrist is prefigured by the conjunction of Jupiter with the Moon,³⁰ although he considers the conjunction of Jupiter with the other planets to be more important.

The planets for Bacon are signs and not causes, and they indicate that from eternity God disposed that all should occur according to nature by his omnipotence, either through human will or through reason.³¹ Therefore Christians became such not by virtue of the planets but by the grace of God, even though they may modify their physical complexions and push themselves to accept different customs and religions.³² Thus, the physical complexion influenced by the stars cooperates with the grace of God. This doctrine was condemned,³³ along with others of his such as the universal reform of all knowledge, including theology, natural sciences and language, and Bacon himself was sent to a convent. The trouble was the deterministic scheme, which seemed to cancel any liberty and omnipotence whatsoever from God's designs, placing everything under the mechanical laws of planetary motions.³⁴ No wonder that few Latins adopted these doctrines, which also had the demerit of involving figured representations of the birth of Christianity and indirectly of Christ or of Muhammad. In fact, the universal horoscopes of religions have been improperly called "of Christ" or "of Muhammad," with the same inaccuracy whereby the scandalous horoscope of Christ by Cardano and others in the Renaissance (about which, more below) were also so called.³⁵

³⁰ Roger Bacon, *Opera hactenus inedita*, ed. R. Steele, *et alii*, fascicle 16, Oxford, 1905–1940, pp. 8–9, 42–50; *Moralis philosophia*, ed. F. Delorme and E. Massa (Zurich: 1953), p. 200.

³¹ Roger Bacon, *Opus maius*, ed. Bridges (Oxford: YEAR), vol. I, pp. 138–148, p. 266.

³² Roger Bacon, *Un fragment inédit de l'Opus tertium*, ed. P. Duhem, (Florence: Quaracchi, 1909) p. 169.

³³ J. North, "Roger Bacon and Saracen," concerning censorship, pp. 136–142.

³⁴ Compare J. Moorman, *A History of the Franciscan Order from its Origins to the Year 1517* (Oxford: 1968), p. 145.

³⁵ J. North, *Horoscopes and History*, *cit.* p. 164.

This fear in regard to the arrival of a terrible enemy who would destroy Christianity, continued throughout the 13th century and into the next century, and the fear increased particularly at century's end, inspiring some theologians of the 13th century to go beyond Bacon, examples being Peter of Limoges and Henry Harclay, although with different intensions in regard to the problem of the eventual crises of the religions and the end of the world, which they studied using the astrological calculus of the great centenary conjunctions or with the more simple calculus of an annual revolution.

b) *Peter of Limoges and Pastoral Astrology (praedicabilis): The Arrival of the Antichrist and the End of the World*

Thus some preachers (*predicatores*) intending to refer in their sermons to the celestial bodies as anticipatory signs rather than as causes of religious events, contributed to creating a tradition of astrology subsequently denominated *praedicabilis* by Marie-Dominique Chenu. They referred to the new star of Bethlehem which appeared at the birth of Christ according to the Bible, and this argument would become a commonplace among Renaissance philosophers such as Pierre d'Ailly, Marsilio Ficino and others.

Thus the fears about the advance of the Muslims among the Christians induced Peter of Limoges, a very able astronomer in the 13th century, to compose a *Sermon on the Antichrist*, just when Bacon was active; and there he described a revolution of the world marked by the four ages which began with the birth of Abraham, followed by that of Moses and then of Christ, lasting until the arrival of the Antichrist at the end of the world. Peter of Limoges³⁶ describes some aspects of the birth of Christ and of the Antichrist in biblical messianic terms, according to the astrological indications of the domifications of Mashallah's planets along with the exaltations of Alchabitius, simpler and less articulated with respect to the complex calculations of the theory of great conjunctions. In this view, Christ was not born with his ascendant in the sign of Virgo, but rather in Libra, with Saturn in exaltation and Venus in its own house. The Antichrist would have his ascendant in Capricorn, with Mars in exaltation. With Mars and Saturn in exaltation in the sign of Capricorn, the conjunction of the Moon would signify the arrival of the Antichrist and

³⁶ N. Beriou, "Pierre de Limoges et la fin des temps," *Mélanges de l'École Française de Rome* 98 (1986), pp. 65–107. Text on pp. 96–102. Concerning astrology *praedicabilis* see also n. 85.

the end of time. According to this apocalyptic astrological theory, the four ages of the world end in the arrival of the Antichrist, due to the conjunction of the maleficients Saturn and Mars with the Moon in the sign of Capricorn. This theory, similar to Bacon's and deriving from the original source in Albumasar, was questionable from an astrological viewpoint, because the transits of the Moon are very brief and mutable, so an event of such importance and with such prolonged consequences could never be dated precisely. This criticism was suggested by Henry Harclay (1312–1317) in his *De Anticristo*, mainly aimed at Joachim of Fiore and Arnaldus de Villanova, and therefore against efforts to explicate Albumasar's conjunctionist theory. Arnaldus wrote his *De tempore adventus Antichristi* in 1297, using only biblical arguments, not astrological ones.³⁷

c) *Henry Harclay's De Anticristo*

Henry Harclay not only attacks the biblical and religious arguments of Arnaldus de Villanova, but also those astrological ones which Harclay introduces in order to refute them—namely, concerning the second coming of Christ, i.e., the Antichrist. He asks whether this second coming can be demonstrated by biblical authority (*per Scripturam*), by the narratives of philosophy or the affirmations (*dicta*) of the astrologers.³⁸ The theory which he refutes he attributes to Albumasar and derives from the *De Vetula*. The Antichrist, who would be the founder of the sixth and last sect, would arrive by way of the conjunction of Jupiter, master of faith, with the moon, which signifies “*adventum legislatoris nefandum scilicet Antichristi*” (the arrival of the wicked legislator or the Antichrist).³⁹ But there would also be the conjunction announcing to the Muslims the birth of a false prophet provoking the destruction of their religion. But this theory, Harclay maintains, is of no importance even if Albumasar “in book I, difference 4 of *De coniunctionibus planetarum*, discussing the conjunction of Jupiter with the Moon, sustains that the phenomenon generates doubt (*dubitacionem*), change and the extinguishing of faith.”⁴⁰ Such effects, he claims, may come from the speed, mutability, and volubility of the Moon's

³⁷ F. Pelzer, “Die Quaestio Heinrichs von Harclay über die zweite Ankunft Christi und die Erwartung des baldigen Weltendes zu Anfang des XIV Jahrhunderts,” *Archivio italiano per la storia della Pietà* 4 (1948), pp. 27–82 (text, 53–83).

³⁸ *Op. cit.*, p. 53.

³⁹ *Op. cit.*, p. 79.

⁴⁰ *Op. cit.*, loc. cit.

motions, as well as because of the meanness and insignificance of this body; but the conjunction will last only a short time (*parum ergo durabit*). According to the theory, the sixth religion, the religion of the Moon, would arrive after the fall of the religion of Muhammad, which according to the computation of Arabic years, should be in the year 660, corresponding, says Harclay, exactly to the year 1313 of the current Christian era, and thus exactly in the moment when he was writing, although nothing happened. "How such intelligent men could have accepted this doctrine is indeed amazing," Henry adds.⁴¹

d) *Galeotto Marzio da Narni, the De incognitis vulgo and the End of the Revealed Religions*

These discussions about identifying the sixth religion and forecasting the arrival of the Antichrist or the end of the religion of Muhammad or the redemption of Israel encountered the same derision in the high Renaissance as they did in the time of Henry Harclay, although with very diverse accents and intentions, in the work of the eclectic hedonist humanist philosopher Galeotto Marzio da Narni (Narni 1423–died between 1494 and 1497). This philologist, astrologer and physician at the court of Matthias Corvinus wrote a work entitled *De incognitis vulgo* (1477–78) on the ignorance of the vulgar concerning the hidden truths whose secret will be revealed (such as the epochal changes in religion) which was condemned and remained in manuscript; he probably avoided prison due to the patronage of Lorenzo de' Medici.⁴² He was a strong proponent of strict astral determinism and believed in the cosmic necessity propounded by Stoic philosophy, a doctrine which had begun to make the rounds of astronomical circles. A certain astral fatalism was typical of the reborn paganism which had taken root in the latter half of the Quattrocento among humanists like Lorenzo Bonincontri. An important reference point was Manilius' *Astronomica*, which had recently been rediscovered by Poggio Bracciolini, and which Galeotto contributed to publishing in an edition fit

⁴¹ *Op. cit.*, p. 80.

⁴² Cf. G. Miggiano, "Galeotto Marzio", ad *vocem*, *Dizionario biografico degli italiani* with comprehensive bibliography. See also my "Galeotto Marzio da Narni, un filosofo umanista eclettico," in A. Pieretti, ed., *Presenze filosofiche in Umbria* (Atti del Convegno Perugia 17–18 novembre 2010), vol. II (Udine: Mimesis, 2012) pp. 97–125, in particular an edition of the index of chapters of the *De incognitis* from the manuscript in Turin, Bibl. Nazionale, E.IV, 11, ivi a pp. 102–104.

to replace the outdated one of Iacopo Angelo da Scarperia.⁴³ Nonetheless, as a good skeptical humanist and follower of Epicurus, he makes fun of the ascetic spirituality of Marsilio Ficino's Neoplatonist philosophy. Converted to the Classical idea of paganism, he shies away from Christianity, and he sympathizes with the Muslim religion and the Arabic language, of whose astrological tradition he shares all the techniques, while correcting its most famous exponents by the newest tables,⁴⁴ and defending it against the prophecies about the end of the religions, mentioned by Henry Harclay among others. Therefore in *De incognitis vulgo*⁴⁵ he recalls this prophecy about the fall of the religion of the Muslims and attributes to Duns Scotus the astrological prediction of the movement when this would happen, in the year 1300. He exemplifies a series of astro-religious discussions that by his time were long in the past but that still exerted an influence, despite the imprecisions.

e) *The Fall of Islam*

The Muslims always feared that the religion of Muhammad, like that of the Christians, would eventually fall. This is demonstrated by the testimony of a faithful pupil of Albumasar, namely, Shadhan (Abū Sa'īd Shādhān b. Bahr, active in Baghdad at the end of the 9th century), whom we have already mentioned, and who describes a quick conversation with his maestro on the most interesting, difficult and secret subjects, such as this one regarding the fall of his religion, in a work entitled *Extract of the Astrological Secrets of Albumasar*.⁴⁶ In this work, Shādhān is preoccupied about the future of their religion and questions the maestro about whether he knows when it will give way to another, and if this is possible, but the response is vague. Albumasar says, he "does not know exactly, but it might be possible because at the end of the millennium, any heretical apostate who

⁴³ Manilius, *Astronomica (Il poema degli astri)*, It. trans. and Latin text, books I–II, S. Feraboli, E. Flores, R. Scarcia eds. (Milano: 1996); G. Miggiano, *Galeotto Marzio da Narni*, cit. pp. 479 and following.

⁴⁴ In particular, *De incognitis*, chaps. 20 and 22, and in the other work of his, better known, the *De doctrina promiscua (La dottrina delle culture diverse)* written in 1490, where he dedicates much to arguments of astrological theory and techniques. The superiority of the other religions, especially that of pagan Antiquity, over the Christian one, and the paltriness of the Christian one is sustained in many chapters and especially in chapter 31, "De excellentia fidei Christiane et secta Gentilium et Machometi secta fit mentio."

⁴⁵ *De incognitis*, chaps 5 and 20.

⁴⁶ See note 13.

proposed a particular heresy at that time would get the power (*regnum*).⁴⁷ This work had a certain fortune in the high Renaissance through the citations to it by the learned court astrologer of the Este princes in Ferrara, Pellegrino Prisciani (1435–circa 1518), in regard to the prayer of the planets under the beneficent configuration of the Dragon's Head with the Moon and Jupiter in midheaven to gain a favor.⁴⁸ Shādhān speaks of this in his *Dialogue* with Albumasar (so Pellegrino recounts) recalling the ancient astrological practice of the prayer of the planets practiced by the Greek kings. Prisciani, citing Shādhān, suggested, in a letter to the princess Isabella d'Este Gonzaga, that her prayer to obtain a favor would be effective if pronounced in the moment of the arrival of the beneficent configuration of the Dragon's Head at midheaven, which was just then happening. If spoken with due devotion, her prayer would be answered.⁴⁹

f) *The Sixth Religion, the Rebirth of Israel*

The possibility of a sixth religion involving the ruin of a preceding one and the rebirth of a new one, drew the attention of Jewish astronomers like the two Abrahams mentioned above, to the new great conjunctions which would announce the redemption of Israel. Abraham ibn Ezra's work was translated by Henry Bate of Malines and by Pietro d'Abano but also by Latin masters with astrological interests, such as Biagio Pelacani da Parma,⁵⁰ whereas of Savasorda's *Liber revelator* (*Megillat ha-Megallet*) only the fifth chapter, *De redemptione Israhel*, was known, in a translation

⁴⁷ G. Federici Vescovini ed., Latin version of this work, published in *Archives d'histoire doctrinale et littéraire du Moyen Âge* 65 (1988), p. 300, parag. 3.

⁴⁸ On Pellegrino Prisciani, A. Rotondò, "Pellegrino Prisciani (1435–1518)," *Rinascimento*, IX, 1960, pp. 69–110.

⁴⁹ Concerning the astrological practice of the prayer to the planets of the Greek kings suggested by Pellegrino Prisciani based on Shādhān, see also A. Luzio, R. Renier, "La cultura e le relazioni culturali di Isabella d'Este Gonzaga," *Giornale storico della letteratura italiana* 36 (1900), pp. 335–36. On this pagan cult of prayers to planets in general, A. Warburg, *La rinascita del paganesimo antico*, ed. E. Cantimori (Florence: 1966), p. 249, and my study on the representation of the decanic divinities at the Este court in Ferrara and the influence of the astrological knowledge of Pellegrino: "Gli affreschi astrologici del Palazzo Schifanoia e l'astrologia alla corte dei Duchi d'Este tra Medioevo e Rinascimento," in *L'Art de la Renaissance entre science et magie*, ed. Ph. Morel (Roma: 2006), pp. 52–82.

⁵⁰ For the life and works, see my monograph, *Astrologia e scienza La crisi dell'Aristotelismo sul cadere del Trecento e Biagio Pelacani da Parma* (Firenze: 1979). For the works on optics, see now the critical edition, G. Federici Vescovini, J. Biard et al., *Blaise de Parma, Quaestiones super perspectiva communis* (Paris: 2007). In addition, *Quaestiones de anima*, ed. G. Federici Vescovini (Florence: 1973).

from French into Latin by the friar Theodoric of Northen.⁵¹ There Savasorda reconstructs the calculations of the great conjunctions from the *exordium mundi* which would establish the time of the redemption of Israel. He states “if we wish to inquire about the kingdom and redemption of Israel we must begin to calculate the greatest conjunction (*valde magna*) that witnesses the redemption of Israel through the emancipation from Egypt and the birth of Moses, events which signaled the beginning of the reign of Israel.”⁵²

g) *The Theocentric Astrology of Abraham Savasorda (Bar Ḥiyya): The Liber de redemptione Israhel*

Abraham Savasorda wanted to give a scientific confirmation of the faith in the rebirth of Israel, holding as certain that religious destinies have their basis in the heavens, and that the mathematical calculations of the astrology of the conjunctions could indicate the future direction. Ordinarily such calculations were based on the mean motions of the planets as provided by Albumasar. Savasorda redid the calculations on the basis of the planets' true motion, criticizing the previous method, from the standpoint of his Neoplatonic conception of creation, according to which, the celestial circles, eccentrics, epicycles and deferents, were real and substantial circles. Starting from a theological metaphysics of light, he maintains that the generation of the sublunary forms occurs by the luminous rays of the celestial bodies, whose action is stronger at the center than at the circumferences bearing the planets. Thus the planets are substantial spheres which have more force than simple conjunctions due to their centers, and they have greater influence with respect to the circumferences of all the circles traced by the planets, and therefore also more than the

⁵¹ This occurs in two manuscripts containing the *De redemptione Israhel*, Wolfenbüttel, lat. 479, (Guelf 444 Helmst), fol. 177ra–183ra, sec. XV, and Leipzig Bibl. Univ. Lat 1767, fol. 214ra–227ra, but with a different *explicit* because the *explicit* of the Leipzig manuscript is the date of the copyist and the erroneous attribution of the writing to Abraham Abenezra; instead, in the copy of Wolfenbüttel he is simply called Abraham *Princeps*. Leipzig, ms cit., fol. 214ra: *Incipit* “liber Abrahe principis de redemptione, Israel, Deus lux est et in eo tenebre non sunt ulla,” fol. 227ra: “Explicit liber Abrae Avennarre de redemptione filiorum Israel quem transtulit de gallico in latinum Theodoricus de Norten Baccalarius sacre theologie ordinis predicatorum, scriptum per fratrem Theodoricum Russi (?) ordinis fratrum minorum de convento Gotingensi anno domini millesimo quadringentesimo XLVI, in Gronenberch pro tunc ibidem lector.”

⁵² Abramo Savasorda *De redemptione Israhel*, ms. Wolfenbüttel, cit., fol. 177vb.

mean motion⁵³ calculated on the equant circle (equation of the planets).⁵⁴ In spite of the criticism, this calculation of the mean and true motions of the conjunctions was valid. Thus Pierre d'Ailly refers to Savasorda when he affirms in chapter 32 of his *Elucidarium* that he "draws these doctrines from the words of a certain Abraham, so that from them may be derived the model for applying this and similar mean conjunctions to the many remarkable events that he (Pierre) had noted in this already cited book" ("hec autem ex Abrahe illius dictis breviter recitavi ut ex his capiatur exemplum applicandi has et similes coniunctiones medias ad magnos et mirabiles eventus rerum quales multos notavi in preallegato").

According to Savasorda the great conjunctions occur every 238 years and not every 240,⁵⁵ and the millennium based on the conjunction *fortis* or *valde magna* occurred in 973 years rather than 960, contrary to what the followers of Albumasar asserted. Thus the horoscope of Christ, calculated on the basis of the *Exordium mundi* and the birth of the religion of Israel involving the events of the lives of Abraham and Moses, was described with the ascendant in Virgo in the triplicity of the element of earth as established by Albumasar, and Pierre d'Ailly gives a textual discussion of this calculation as transmitted by Savasorda. According to Savasorda, the birth of Christ took place in a sign indicating sorcery and incantations, just as the great conjunction which announced the birth of Muhammad occurred in the successive triplicity of Scorpio, signifying impiety and falsehood. The redemption of Israel on the other hand is established by the triplicity of Aquarius with the ascendant in Sagittarius,⁵⁶ with Jupiter and Venus in conjunction, as is clear (so he adds) from the graphic symbol thus traced (*ut patet in figura*).⁵⁷

⁵³ *De redemptione Israhel*, ms. Wolfenbüttel, lat. 479, f 177 rb-va e G. Federici Vescovini, "Una versione latina medievale dell'opera escatologica di Abramo bar Hiyya (Savasorda), *Megillat-ha-Megalleh: il Liber de redemptione Israhel*," in *Filosofia e cultura per Eugenio Garin*, C. Vasoli, M. Ciliberto ed., Roma, vol. 1991, pp. 6–37, in particular pp. 22–23 with the exposition of this theory.

⁵⁴ See the reconstruction of this astrological technique for uniformizing the apparent movements of the faster planets when they accelerate or the slower ones when they go retrograde, in the astronomical teaching at the end of the 16th century, in O. Pedersen, "The Theorica Planetarum and its Progeny," in *Filosofia, scienza e astrologia nel Trecento Europeo*, with a comment by R. Klibansky, G. Federici Vescovini, F. Barocelli ed. (Padua: 1992), pp. 53–79.

⁵⁵ *De redemptione Israhel*, ms., Wolfenbüttel cit., fol. 177va.

⁵⁶ *Op cit.*, ms. cit., fol. 180vb–181rab.

⁵⁷ *Op cit.*, ms. cit., fol. 183rb.

h) *Biagio Pelacani da Parma and the Rebirth of Israel*

An echo regarding the identification of this sixth religion which supposedly returned the religion of Israel, so that the religious message would not end with the fifth religion, namely that of Christ, certain and eternal (as all the religious authorities were convinced it would be, including the theologian Henry Harclay), but instead, would end with another religion (not Christianity), comes up in the questions posed by Biagio Pelacani da Parma (Costamezzana-Parma, circa 1354–Parma 1416), in his lessons on natural philosophy and astronomy given in the faculties of Arts, Philosophy and Medicine at Pavia, Bologna, Padua and Florence (1375–1411). This possibility caused worry because it was connected with the eventual destruction of the people who professed the religion in question. He asked whether the religions were five in total, or rather six. A critical Aristotelian philosopher, a subtle logician, and a mathematician renowned for his work on perspective, he was also an astrologer, well respected by famous condottieri such as Facino Cane and by the Carraresi,⁵⁸ lords of Padua, as well as by the Visconti of Milan. The bishop of Pavia previously censured him for supporting a strict astral determinism and opposing the immortality of the rational soul, and indeed, claiming that the soul came from spontaneous generation due to the power of matter under a favorable stellar aspect. For obvious reasons, he was cautious in asserting the possibility of this sixth religion, which would be the consequence of the end of the fifth, i.e., of Christianity. But, citing the theory of the great conjunctions of Albumasar, he suggested that such was possible and that there might indeed be a rebirth of the religion of Moses and a return to Judaism. In various passages of his comments on the works of Aristotle, notably the *Meteorologica* and the *De anima*, he affirmed that “when Jupiter joins with Saturn and then with Mars and so also with the other planets, it makes six conjunctions, and for this reason there are five religions” (which he quickly corrected in more radical terms)—“or rather six, different from one another: so the conjunction of Jupiter and Saturn gives the Jewish religion, of Jupiter and Mars gives the Chaldean, whose devotees are fire-worshippers; of Jupiter and the Sun gives the Egyptian religion, of Jupiter and Venus the Saracen one; of Jupiter and Mercury the Christian religion; so the conjunction of Jupiter and the Moon should re-establish the religion

⁵⁸ Cfr. *Padova Carrarese*, ed. E. Berti (Padua: 2004).

of the Jews and" (he adds maliciously) "whether this last one is more stable and pleasing to God I cannot say."⁵⁹

These doctrines were accepted by few, due to opposition by rabbinical as well as Christian authorities.

i) *Cecco d'Ascoli*

The story of Cecco d'Ascoli (Francesco Stabili) stands as a confirmation of this last statement. A physician, astrologer and necromancer, he was burned at the stake in Florence in 1327 for various reasons, still not entirely clear but relating to the political, social and religious implications of his theories.⁶⁰ In his lessons at the University of Bologna from 1322 to 1324, commenting on Sacrobosco's *De sphaera*, he taught that the celestial and terrestrial sphere was governed by the demons of the angles of the colure, residing in the four cardinal points. He publicly sustained the dualistic doctrine of the "impious" religion of Zoroaster (the text that has survived has been emended), insisting among other things that the birth of Christ and Christ's message of salvation depended on the necessity imposed by stellar conjunctions, that the virgin birth of Mary depended on the influence of the Incubus and Succubus spirits, and so also did the lives of many saints, and that the events of her life were the work of the demons who ruled the stars and not of God. He claimed not only to foresee the future but to be able to perform prodigies by the aid of a demon named Floron.

These astrological, magical and necromantic ideas nonetheless represented an aberration in the history of the relations between astrology and religion in these centuries, because they introduced necromantic magic into astrology. The astrological, theurgical, necromantic practices of astral magic re-emerged later in the Renaissance with the rediscovery of the astrological necromantic Hermetic Arab text *Picatrix*, probably in part through the authoritative mediation of Marsilio Ficino. The Bolognese Inquisition combined with the Florentine one to bring about Cecco's

⁵⁹ Biagio Pelacani da Parma, *Questiones de anima*, ed. G. Federici Vescovini (Florence: 1974), pp. 80–81.

⁶⁰ For the reconstruction of these events with the publication of some documents see my *Le moyen âge magique, la magie entre religion et science aux XIII^e et XIV^e siècles*, chap. XI (Paris, Vrin: 2011), pp. 279–298. See also A. Rigon ed., *Cecco d'Ascoli, cultura, scienze e politica in Italia nell'Italia del Trecento* (Rome: 2007). For the emended text of the Bevilacqua edition of 1499, published in Venezia by Ottaviano Scoto, 1518, of the *De Sphaera* see L. Thorndike ed., *The Sphere of Sacrobosco and its Commentators* (Chicago: Chicago University Press, 1949).

irrevocable condemnation, and his burning certainly had a significant influence. Using the theory of stellar influences to explain religious events and the birth of religions was now prohibited and condemned and therefore studiously to be avoided.

The most notable exception between the end of the Trecento and the beginning of the Renaissance was represented by the work of the cardinal Pierre d'Ailly, who was one of the targets of the most virulent critiques by Giovanni Pico della Mirandola in the treatise against judicial astrology.

7. *Pierre d'Ailly*

Pierre d'Ailly (1350–1420), bishop of Cambrai,⁶¹ partially adopts the arguments of the Parisian condemnations by Étienne Tempier in 1270 against the determinism of the celestial bodies, as well as those of the writings against Nicole Oresme,⁶² bishop of Lisieux, and Henry of Langenstein, two illustrious professors in the University of Paris. In the first of his works where he deals with astrology,⁶³ he attempts to adapt his astrological doctrine to the exigencies of sacred science and theology, and therefore, he utilizes the distinctions found in Christian encyclopedists like Isidore of Seville and also the classifications of the permitted sciences made by Domenico Gundissalvi and Robert Kilwardby, distinguishing superstitious from valid astrology. The first (called genethliac or *de nativitate*) is that which pretends to predict individual events, as Ptolemy explains in the *Tetrabiblos*. The acceptable type on the other hand is the world astrology that concerns the conjunctions that sustain the horoscopes of the events of the world. The genethliac or *de nativitate* regarding individuals is superstitious and illegitimate because it places human will under merely natural constraints. World astrology is different because it regards universal events rather than the individual will of humans. Nonetheless in his first writings dealing with this argument Pierre d'Ailly does not associate the astrological prediction of great religious events with prophecy,

⁶¹ See B. Guenée, *Entre l'Église et l'État. Quatre vies de prélats français à la fin du Moyen Âge* (Paris: Gallimard, 1987), pp. 125–299; in particular on the astrology of Pietro d'Ailly see L. Ackerman Smoller, *History, Prophecy and the Stars, The Christian Astrology of Pierre d'Ailly* (Princeton: 1994) and G. Federici Vescovini, *Le Moyen Âge magique, cit.* (on Pietro d'Ailly, pp. 266–273).

⁶² Nicole Oresme, *Tractatus de commensurabilitate vel incommensurabilitate motuum celi*, ed. E. Grant (Madison: 1966); *Questio contra divinatores oroscopios*, ed. S. Caroti, *Archives d'histoire doctrinale et littéraire du Moyen Âge* 43 (1977), pp. 201–310.

⁶³ Pierre D'Ailly, *De falsis prophetis*, ed. Dupin, Antwerp, vol. 1, coll. 511–603.

as he would do in his mature works of 1414. He experienced the Great Schism of the Council of Constance and wondered whether the events of the Church, disturbed by discord and dissent, might be the prelude to the arrival of the Antichrist and the end of the world. Can history indeed be separated from the horizon of Universal Judgment? Can history be conceived instead as being endless, i.e., without justice?⁶⁴ In the theological vision of human history at that time the end of history was viewed as being necessary because subject to God's judgment, both in regard to the *Novissimi*, i.e., the Four Last Things of the Christians (death, judgment, hell and paradise) and in regard to the Jews still awaiting the triumphal arrival of Israel with the Resurrection of the new Jerusalem. The most considered views of learned Christians and Jews alike were permeated with eschatological thinking, especially at the end of the 14th and the beginning of the 15th centuries, in the years of Pierre d'Ailly; and his position thus seems very close to that of Roger Bacon.

In a sermon of 1385 d'Ailly refers to the prophecy of Joachim of Fiore on the arrival of the Antichrist and the prediction of Arnaldus de Villa Nova in *De tempore adventus Antichristi*, not elaborated with astrological arguments but drawn from the biblical book of Daniel and the doctrine of St Augustine.⁶⁵ He considered the end of the world to be imminent even though he claimed to be unable to establish exactly when it might occur.

In his *De legibus et sectis contra superstitiosos astrologos* of 1410,⁶⁶ basing himself on a notion of the concord between biblical revelation and astral conjunctions, he takes up the scheme of Albumasar and establishes that there are six religions: the Christian, the Jewish, the Chaldean, the Egyptian, the Saracen, and finally the sixth one yet to come, which would be that of the Antichrist for the Christians, of the fall of the religion of Muhammad for the Muslims, and that of the rebirth of Israel for the Jews. He justified the conjunctionist theory, with respect to the superstitious genethliac one, using the argumentations of a previous tradition that allowed an astrology concerning general events and not individual actions and therefore not shackling free will. In any case, d'Ailly prudently affirms, predictions are not necessitating, but purely conjectural and probable. Indeed, nature's way is never the way of necessity, since it depends on

⁶⁴ J. Benoît, *La fin de l'histoire*, in Id. and F. Merlini, *Après la fin de l'histoire, temps, monde, historicité* (Paris: 1998), p. 17.

⁶⁵ Arnaldus de Villa Nova, "De tempore adventus Antichristi," ed. J. Perarnau, *Arxiu de Textos Catalans Antics*, 7–8 (1988–1989): 67–133.

⁶⁶ Pierre d'Ailly, *De legibus et sectis* (Louvain: 1484) cap. 4 et cap. 8.

divine decree (*nutu Dei*), whereby God has deigned to “cooperate with natural causes, except where a miraculous cause intervenes.” The natural order expressing *potentia ordinata*, as discussed at the time in the universities in connection with Peter Lombard’s *Sentences*,⁶⁷ did not in d’Ailly’s view constitute a limit on the *potentia Dei absoluta*.

These themes are extensively developed in the *Trilogia*, which so scandalized Giovanni Pico, comprising the *Vigintiloquium seu concordantia astronomicae veritatis cum theologia*, the *Concordantia astronomicae veritatis cum historica narratione* and the *Elucidarium*, published in Augusta (Ratdolt) in 1490 and again in 1499 with emendations by Johann Engel. In this writing d’Ailly professes, more than in his previous works, to hold to the validity of the predictions of Arabo-Greco-Latin astrology, of which he appears to possess a surpassing knowledge. In particular, he evinces the influence not only of the great Arab astrologers such as Mashallah and Albumasar, but especially, he recognizes the Jewish origin of astrology, tracing it back to Noah who by God’s illumination was able to predict the Universal Flood. He thus claims to be able to demonstrate the agreement between prophecies given by way of divine inspiration through illumination from God, and astronomical revolutions. The two types may be in agreement and confirm the great religious events by judgments on the basis of planetary movements. He refers to the *Liber de redemptione Israel* which is the fifth part of the *Liber revelatoris* (*Megillah ha-Megallet*) of Abraham Savasorda, who I believe to be the Abraham *Judeus* often cited by d’Ailly.⁶⁸ This attribution seems credible because he cites Abraham as the author of the fifth book of the redemption of Israel, and in his *Eucidarium*, especially in chapters 32 and 33, he carefully discusses the calculations of a certain Abraham, whom he once also calls Avenezre (chap. 32).⁶⁹ He corrects the calculations as he goes through them, but he agrees with the basic procedure because he observes that the words of this certain

⁶⁷ Pierre D’Ailly, *Questions sur les Sentences*, ed. Petit, Paris, s.d., fol. 192 B.

⁶⁸ Concerning the Latin manuscripts of the *Liber de redemptione Israel* and the discussion of Pietro d’Ailly see especially G. Federici Vescovini, *Pierre d’Ailly e Abramo Savasorda: una fonte ebraica dell’Elucidarium di Pierre d’Ailly*, in *Les philosophies morales et politiques au Moyen Âge* (Atti del IX Congresso internazionale di filosofia medievale, Ottawa 17–22 agosto 1992), (New York, Ottawa, Toronto: 1995), vol. III, pp. 1635–1655 and my *Medioevo magico*, cit., pp. 253–275.

⁶⁹ “Hec autem ex Abrahe illius dictis breviter recitavi et ex his capiatur exemplum applicandi has et similes coniunctiones medias ad magnos eventus earum quales multos notavi in preallegato tractatu de concordantia astronomie et historice veritatis et poterit sumi radix ad consignandum illas coniunctiones ex illa quam dictus Abraham notavit” (*Elucidarium*, chap. 32).

Abraham give rise to the conjunctions. He therefore affirms, softening his criticism of the text, that “the applications of the most important events of the world which are consigned here [in this same text], are not to be condemned because of the things already said [i.e., his previous criticisms], because they can be saved by various reasons, firstly by considering them to be real conjunctions—not just the greatest ones, but also the most important ones which I discussed above” (*Elucidarium*, cap. 29).

Although with due criticism, he accepts the general principle of theocentric astrology; the accord between astrological events and the historical events of the Bible. Thus the liveliest discussion with Savasorda will be about the latter’s placing of the birth of Christ (which follows Albumasar’s with some modification) in the triplicity of earth rather than in that of air, as consistency should have demanded.⁷⁰ Savasorda’s calculations (he insists) are therefore wrong, and so are those of anyone who used them. As I said before, Pierre d’Ailly’s confusion between the two Abrahams is a fact of cultural history. The mistake was clearly indicated by Giovanni Pico when he said that “the cardinal falsely called this Jewish Abraham ‘Avenazre,’ although he was indeed the one called Nasi, also called the Patriarch.”⁷¹ D’Ailly’s confusion is nonetheless justified by one of his sources,⁷² namely, the *De revolutionibus mundi* of Abraham ibn ‘Ezra (Abenezra)⁷³ in the translation by Henry Bate of Malines, often cited by him in this trilogy. Henry Bate of Malines, in his prologue to the

⁷⁰ Pierre d’Ailly, *Elucidarium*, cap. 24 e 25.

⁷¹ Giovanni Pico della Mirandola, *Disputationes in astrologiam divinatricem* (Bologna: 1496), II, chap 5: “Abraam iudeus, non qui dicitur Avenazre ut false credidit Alliaccensis (Pierre d’Ailly), sed quem vocant Nasi, hoc est patriarcham”.

⁷² Jean-Patrice Boudet, who has reconstructed the text of the *Trilogia* on the basis of the manuscripts, observes that this edition is the work of several hands and in the edition there was the intervention also of Engel. We do not know, therefore, who added the name Avenazre (ibn ‘Ezra) or if this attribution is his. It seems evident however that D’Ailly must have had before him both works on conjunctions by the two Abrahams. According to Boudet, to the two hands, one of the nephew and another unknown, but more expert than the former in the calculations and intending to correct them, there must be added a third hand, which is the hand of the editor who emended the editions of 1490 and 1499. See J.-P. Boudet, “Un prelat et son équipe de travail à la fin du Moyen âge,” *Terrarum orbis* 3 (Actes du Colloque de l’Université de Reims, 18–29 nov 1999) (Turnhout: 2002), pp. 129ff, on the horoscope of Christ, pp. 133–135.

⁷³ Abraham ibn ‘Ezra, *De revolutionibus annorum mundi*, Limoges, Bibl. Munic., ms. n. 9, fol.131v: “Incipit prologus translationis libri Hebere Hevenere de revolutionibus anno rum mundi seu de seculo. In vestibulo quidem sermonis obstupimus ignorantes quo animi principi astrologorum Albumasar deferre neglexit quin saltem tanti verba philosophi in parte interpretatus fuisset... qui se gloriatur illius discipulus qui significationibus coniunctionum in triplicitatibus iudicia commiscet esprese coniunctionum mediarum ex dictis ‘Abrae Principis in quinta particula libri redemptionis Israel,’ quem quidem Habraam

translation of *De magnis coniunctionibus* by Abraham ibn 'Ezra, attributes to this author the *Liber de redemptione Israhel*, calling it the fifth book, although this was actually the fifth part of Savasorda's *Liber Revelator* (*Megillah ha-Megalleh*). Thus d'Ailly's erroneous attribution of the text in front of him containing calculations of the revolutions of the world may depend on confusion regarding his main sources, stemming in part from Henry Bate of Malines. The historical equivocation based on the fusion of these two Abrahams would only be brought to light by Giovanni Pico della Mirandola's *Disputationes contra astrologiam divinatricem*. Abraham Princeps, known as Nasi or The Patriarch, author of the *Liber de redemptione Israhel* is Savasorda. This text, the fifth part of his *Liber revelatoris*, is the only part of that work which was not known to the Latins in its entirety, and circulated only in the original Hebrew.⁷⁴

D'Ailly fully accepts the implications of the supposed Abraham's conjunctionist theory, sustaining the agreement between religious revelation and astrological calculations, but he bitterly criticizes the numbers and the dates, which in his opinion mistake the period the birth of Christianity and therefore of Christ.

Thus in the *Elucidarium*, from chapters 24 to 32 and again in chapter 34, he undertakes a revision of the mathematical values of the *Liber de redemptione Israhel* in order to correct the two key horoscopes presented by the Abraham in question, putting his own values in place of those which Savasorda had drawn from Albumasar, especially those regarding the triplicities.⁷⁵ He confutes the astrological interpretation of all those who accepted the description of the horoscope of the religion according to the data furnished by Albumasar, namely, that Christianity emerged with the triplicity of earth, with the ascendant between the fifth and seventh degree of Virgo ("A Virgin in white clothing ascends..."), even though this interpretation seemed to accord with the birth of Christ from an immaculate virgin. A problem with the horoscope, noted from the late 14th century onward, was that it also involved an opposition between Mercury in Pisces and the ascendant in Virgo, interpreted as a negative aspect. D'Ailly therefore strongly criticized this ascendant in Virgo and contested the whole conjunction of the triplicity of earth that presided over the

iste cognominatus Hevenere." The passage is not clear, and concerning the citation of the whole passage see my study "Pierre d'Ailly e Abramo Savasorda", *cit.*, p. 1643.

⁷⁴ The Hebrew text was translated entirely into Spanish by J. M-Millás Vallicrosa. Edition by A. Poznanski with intro and notes by J. Guttmann (Berlin: 1924).

⁷⁵ Like Abraham he begins with the calculations from the *exordium mundi* but going back to the calculation of the Christian era by Bede.

birth of Christianity and indirectly also of Christ, substituting it with the triplicity of the air with the ascendant in Libra. This aspect seemed to all astrologers in the period to have a very noble and elevated significance, since Libra was the sign of Justice, with Christ representing the Sun. The correction introduced by d'Ailly was justified by the new astronomical knowledge coming from new calculations provided by the astronomers of Alfonso X of Castile in the mid-13th century, who combined all Ptolemy's data concerning the precession of the equinoxes (revisited by al-Battānī and al-Souphi) with that concerning the doctrine of the eighth sphere's forward and backward oscillation, called the *trepidatio fixarum*, provided by Azarquiel. Alfonso's astronomers elaborated the Alphonsine Tables, translated into Latin around 1320–25 by Jean de Murs and Jean de Lignères, and diffused only in the mid-14th century with John of Saxony's *Canon*.⁷⁶ The Tables substituted for Ptolemy's star catalogue in the revisions of al-Battānī and al-Souphi (*Azolfi* to the Latins), whose works had hitherto been the basis for astronomical teaching.

These discussions by Pierre d'Ailly remained a point of reference for many criticisms throughout the 15th century including those by Marsilio Ficino and Giovanni Pico, who cite him often in different chapters, to oppose him or demolish his theses in the minutest details.⁷⁷ The positions of these two thinkers regarding astrology however were quite distinct.⁷⁸

8. Marsilio Ficino

As I have said on another occasion,⁷⁹ Marsilio Ficino (1433–1499) had at least two different attitudes with respect to astrology: one destructive and the other constructive, and the two accompanied the phases of his specu-

⁷⁶ On this in particular, E. Poulle, *Les Tables alfonsines avec les Canons de Jean de Saxe* (Paris: 1984), pp. 6–17–19.

⁷⁷ Giovanni Pico, *Disputationes adversus astrologiam divinatricem* (Bologna: 1496); ed. E. Garin, (Florence: 1942, 1946, 1952; reprinted in Turin: 2004). Against Pierre d'Ailly, not only book II, cap. 4, cap. 11: "Non esse astrologiam religioni utilem", but especially book IV, chaps. 7, 8, 9, 10, 15, 16; against the annunciation of the star of the Magi he affirms: "cum falsa sit astrologia, theologicae veritati non posse concordare".

⁷⁸ Compare the revision of the interpretation of the relation between Pico and Ficino by F. Yates, *Giordano Bruno and the Hermetic Tradition* (Chicago: 1964), p. 84, by D. Rutkin, "Magia, cabala, vera astrologia," in *Nello specchio del cielo*, ed. M. Bertozzi (Florence: 2008), pp. 31–45.

⁷⁹ Compare my articles "Marsilio Ficino e lo spirito celeste," *Annali della Fondazione Ugo Spirito* V (1993): 71–90 and "L'espressività del cielo di Marsilio Ficino. Lo Zodiaco medievale e Plotino," *Bochumer Philosophisches Jahrbuch für Antike und Mittelalter* I (1996): 111–126. Compare also D. Rutkin, *op. cit.*, *passim*.

lation. Towards the end of his activity, when he comments on the *Enneads* of Plotinus, he seems influenced by the latter's Neoplatonic vision of the cosmos. He adopts Plotinus' theory of the correspondence between the sky and human life and thus elaborates an entirely spiritualized medical astrology concerned with the soul/*pneuma* of man, which is placed at the center of an animated cosmos where all things have a soul, including stones (endowed with *animulae*, little souls). In this anthropological context the skies are not understood as causes but as signs. Thus in an early work of 1477, the *Contra iudicium astrologorum*,⁸⁰ he bitterly criticizes medieval astrology, but later in the *De triplici vita* (1493)⁸¹ he makes an exception for a spiritualized medical astrology, trimmed of all the barbarous technicalities of the Arab astrologers. At the same time he sharply criticizes the Ptolemaic astronomers' doctrine of the Zodiac, throws out the mathematical casuistry of the degrees, the aspects, the conjunctions, the triplicities, the houses, the parts (the *Pars fortunae, infortunae, mortis, vitae* etc.), the hour of birth, all of which he takes to be cumbersome Ptolemaic elaborations by Arabs like Al-Kindi, Albumasar, Alcabitus, Gergis, and certain Latins. The zodiac had to be considered not quantitatively but qualitatively, as a spiritual essence, the home of those pure semi divine beings that the astronomers summarized in the virtues of the 48 constellations.⁸² Indeed, he suggests that the cosmos is not divided into eight nor nine, but into twelve heavens, referring to the Pythagoreanism that he was in the midst of reviving. In his *De triplici vita*, whose third book was entitled *De vita coelitus comparanda*, he juxtaposed the external movement of the heavens as known to the medieval astrologers with the notion of *circuitus*, involving a free and natural circulation between heaven and earth, in which "natural" did not imply the *physis* of Aristotle (i.e., the substantial principle of the movement of the four elements which Mashallah from potential to actual according to the relation of cause and effect) but instead the notion of *pneuma* or soul.

Thus Ficino removes Aristotle's theory of causality from the medieval zodiac, including the physical action of the star, and substitutes it with the idea of "signifying sign" regarding an event and with the idea of *pendentia* and *dependentia* of earthly events in relation to the celestial rhythms.

⁸⁰ The *Disputatio* is edited by P.O. Kristeller, *Supplementum ficinianum* (Florence: 1936), vol. II, pp. 12–76.

⁸¹ Marsilio Ficino, *Three Books of Life* (Binghamton: 1989); for the comment on the *Enneadi* see *Opera omnia* (Basel: 1576), vol. II (repr. Turin: 1962).

⁸² Marsilio Ficino, *Theologia platonica*, ed. M. Schiavone (Bologna: 1965), vol. I, p. 254.

He returns to a Neoplatonic astrological vision of individual human destinies but rejects any kind of conjunctionist theory of world astrology that might justify an agreement between astral prediction and religious narrative. In an *Epistula*⁸³ laced with irony he discusses the horoscopes of religions, expressing wonderment that religions never change in spite of the frequent conjunctions (considering that the planets return to the same degree every 969 years and in that interval have conjunctions four times in different signs), and remarkably, the Mosaic or Christian law did not exist for many ages of the world and after it did, it was not subsequently destroyed. True, in a sermon of 1482 entitled *De stella magorum*,⁸⁴ he takes the occasion of Christmas to refer to the theme of the correlation between biblical events and astral phenomena, going back to the Gospel narrative of the voyage of the three Magi following the comet star that led them to Bethlehem. But this seems more like a rhetorical ploy of astrological preaching (*astrologia praedicabilis*)⁸⁵ concerning the feast of 6 January which we find also in a youthful sermon of Nicholas of Cusa referring to the Star of Bethlehem.⁸⁶ There Cusanus cites Albumasar's theory of the great conjunctions, but he claims to be very skeptical about any kind of astrological prediction and regards any apparent connections to be purely casual. Cusanus says the same thing again in the *De staticis experimentis*⁸⁷ concerning the validity of astrological predictions, and he demonstrates it in the treatise on predicting the *Novissimi*. The end of the world and the Last Judgment interested him intensely, and so also the return of Christ to judge the living and the dead, the end of earthly history and the arrival of the eternal kingdom promised by Christ—but not in an astrological way. More evidence for this attitude is in his treatise *De coniectura de ultimis diebus*,⁸⁸ redacted in 1446, where he foretells the final resurrection (i.e.,

⁸³ M. Ficino, *Epistolarum liber VII*, in *Opera omnia*, cit., vol. I.

⁸⁴ M. Ficino, *De stella magorum, Praedicationes*, in *Opera*, vol. I, pp. 489–491; *Apologia quaedam in qua de medicina, astrologia, vita mundi, item de Magis qui Christum statim salutaverunt*, ed. Kaske, in *De vita*, cit., pp. 394–404, on this see also S.M. Buhler, "Marsilio Ficino's 'De stella magorum' and Renaissance View of the Magi," *Renaissance Quarterly* 43 (1990): 348–371.

⁸⁵ M.D. Chenu, "Astrologia praedicabilis," *Archives d'histoire doctrinale et littéraire du Moyen Âge* 31 (1964): 62–65.

⁸⁶ Nicholas of Cusa, *Ubi est qui natus est Rex Judaeorum*, in *Cusanus Texte*, I, *Predigten*, 2/5, ed. J. Koch (Heidelberg: 1937), pp. 84–86.

⁸⁷ Nicholas of Cusa, *Gli esperimenti di statica*, in *I Dialoghi dell'Idiota*, Italian translation by G. Federici Vescovini (Florence: 2003), pp. 95–96.

⁸⁸ Nicholas of Cusa, *La congettura sulla fine del mondo*, Italian translation by di G. Federici Vescovini in *La pace della fede e altri testi* (Florence: 1993), pp. 69–82.

the *Novissimi*) with the arrival of Christ in triumph, the end of the work of God in the world and thus the end of time. In this small work Cusanus does not utilize astrological calculations of the great conjunctions and the precession of the equinoxes, but he uses the years of the life of Christ and the Jubilees called by the popes as his units of measurement. With this work, which he composed for moral and consolatory purposes and on the basis of a simple conjecture,⁸⁹ he showed his detachment from the tradition of astrological prophecies as well as the apocalyptic prophecies of the Joachimites, which never bore out in fact.⁹⁰ It is nonetheless remarkable that Ficino, in his reform of spiritualized individual medical astrology with its Plotinian view of the stars as signs and not causes, speaks in this sermon of 1482 of the horoscope of Christ already discussed by d'Ailly, and follows the tradition of Albumasar in pointing to the ascendant in the first decan of the earth-sign of Virgo. But to Ficino all these discussions and the disagreements to which they gave rise, only demonstrated the total unreliability of the calculations.

9. Giovanni Pico

In spite of the common themes, such as the criticism of the concept of the cause of a star,⁹¹ which is equally central in both thinkers, the position of Giovanni Pico (1463–1494) in the *Disputationes adversus astrologiam divinatricem* of 1493–94, is different from Ficino's. He does not justify any type of astral influence, as Ficino does in the *De vita coelitus comparanda* where, drawing on Plotinus, celestial causality is replaced by intelligible signs. The *Disputationes* were published hastily by his nephew Gianfrancesco Pico in Bologna in 1496, also perhaps to defend his uncle from charges of heresy, just in the time of the preaching of Girolamo Savonarola,⁹² who considered astrology to be a diabolical invention against Christian Truth and condemned in the Sacred Scripture.⁹³ In the *Disputations* Giovanni Pico considers all the astrological doctrines of the

⁸⁹ Nicholas of Cusa, *La congettura*, cit. p. 75; on *I Nuovissimi* see especially R. Guardini, *I Nuovissimi* (Milan: 1950).

⁹⁰ *Il profetismo gioachimita tra Quattrocento e Cinquecento*, ed. Luca Podestà (Genova: 1991).

⁹¹ Compare V. Perrone Compagni, "Pico sulla magia: problemi di causalità," in *Nello specchio del cielo*, pp. 107, 113–114.

⁹² In particular G. Garfagnini, "La questione astrologica tra Savonarola, Giovanni e Gianfrancesco Pico," in *Nello specchio del cielo*, pp. 117–137.

⁹³ Girolamo Savonarola, *Contro l'astrologia divinatoria*, (Florence: 1497) (IGI, 8787), bk III, cap. 4 against the horoscopes of religions by Albumasar; book III, cap. 5 on the Anti-

medieval masters including Arabs, Jews like Abraham Savasorda and the Latins who defended the latter, from Albertus Magnus and Roger Bacon to theologians like Thomas Aquinas,⁹⁴ Pierre d'Ailly and physicians like Pietro d'Abano. All, he declares, are incompetent and ignorant particularly in their knowledge of astronomy. In particular he ridicules and criticizes the medical astrologer Pietro d'Abano. On the principles of astrology, Abano elaborated a doctrine of medicine as an astrologico-physico-rational science in his *Conciliator differentiarum medicorum et astrologorum*, a voluminous *summa* of the medicine and philosophy of the 14th century, redacted probably before 1303 and revised in the years from 1303–1310. The work would be eclipsed only in the 17th century as a consequence of the discoveries of Vesalius and the dissolution of Ptolemaic astronomy. But Pico attacks the conjunctionist astrology of Pierre d'Ailly with the most ferocity,⁹⁵ especially the pretense of finding a confirmation for religious truths in the great astronomical revolutions. Pico ridicules Abraham Savasorda's prediction of the timing for the future redemption of Israel as well as Pierre d'Ailly's arguments to demonstrate Christ's horoscope ascendant to be in Libra rather than in Virgo.⁹⁶ The ascent of a child dressed in white in the first decan of Virgo, he goes on, is a mere fable, a fantastic image invented by the Oriental doctrines of the decans, originating in ancient Egypt. "Who has ever seen these images? Who in the silence of experience has discovered them by the hidden paths of reason? Where did Ptolemy or any other Ancient ever speak of them?"

10. *Lucio Bellanti*

His adversaries' ignorance even of the new astronomical knowledge of the Alphonsine Tables gave Pico plenty of material for ridicule, and also an occasion to repeat the denial of any possible concord between religion and astrology even if justified by St Thomas's philosophy and, always on different bases but also with religious intent, by Ramon Llull in the

christ; in particular G. Garafagnini, *"Questa è la terra tua," Savonarola a Firenze* (Florence: 2000), pp. 251–291.

⁹⁴ St. Thomas Aquinas, *Summa theologiae*, Ia q. 115 a.4; IIa IIae q. 95 a 5: "Nullum autem corpus potest imprimere in rem incorpoream, unde impossibile est quod corpora caelestia directe imprimant in intellectum et voluntatem". *Summa contra gentiles*, III, cap. 87; on this especially Th. Litt, *Les corps célestes dans l'univers de Saint Thomas d'Aquin* (Louvain—Paris: 1963).

⁹⁵ Giovanni Pico, *Disputationes*, libro IV, 7–10, 15–17; bk V, cap. 19 ss.

⁹⁶ Ibid.

Tractatus novus de astronomia.⁹⁷ Pico was moved by the necessity to construct a new philosophy inspired by Hermeticism, Neoplatonism, a creative magical vision of man, and by Jewish cabalism, which he illustrated in his *Theses* or *Conclusiones de magia* (1486).⁹⁸ Contrary to the claims of his nephew Gianfrancesco, Giovanni Pico did not condemn astrology because of a wish to show conformity with the Christian religion, but rather because of his diverse metaphysical, ethical and anthropological orientation. Ficino too had elaborated an entirely spiritual and pneumatic concept of man, but different from Pico's. Whereas Ficino had no more use for Aristotle's doctrine of the eight heavens, founded on the theory of movement by the substantial cause, this was not true for Pico. Pico nonetheless in the *Oration on the Dignity of Man*, placed man at the center of a magico-cabalistic vision of the universe in which the heavens were not eight, not nine (as in Ptolemaic astronomy), but ten as in the ten Sephirot to which they corresponded. As has been recently noted, Pico delineated a completely new conception of astrology in his *Theses de magia*. "True" astrology was for him that associated with the cabala and the Sephiroth, whereas traditional astrology was "false."⁹⁹

The attack mounted in the *Disputationes* did not however find a great following at first (except for the nephew, Gianfrancesco), because it was countered in great detail by the Sienese physician-astrologer Lucio Bellanti (professor at Siena in 1487, assassinated in Florence in 1499) in a work called *Responsiones in disputationes Johannis Pici*. This work was printed in Florence by Gerardo de Haerlem almost immediately in 1498 at the end of Bellanti's *De astrologica veritate*. Alongside the works of Pontano and (slightly later) of Gabriele Pirovano,¹⁰⁰ it contributed to continuing the influence of the medieval astronomico-astrological scientific vision, both in respect to astrological medicine and in respect to larger issues of predicting all universal and particular events, even if only in a probable and not necessary sense, for the entire Cinquecento, according to the

⁹⁷ G. Federici Vescovini, "Note di commento ad alcuni passi del libro De pictura," in *Leonardo e Pico. Analogie, contatti, confronti*, ed. F. Frosini (Florence: 2005), p. 120. On Gabriele Pirovano see M. Pereira, "Il *Tractatus novus de astronomia* del Lullo," *Medioevo* 2 (1976): 169–277 (pp. 206–213).

⁹⁸ Giovanni Pico, *Conclusiones sive Theses DCCCC* (Romae: 1486), ("publice disputatae sed non admissae"), ed. B. Kieszowski (Geneva: 1973).

⁹⁹ D. Rutkin, "Magia, cabala, vera astrologia. Le prime considerazioni sull'astrologia di Giovanni Pico della Mirandola," *Nello specchio del cielo*, pp. 37–39.

¹⁰⁰ O. Pompeo Faracovi, "In difesa dell'astrologia: risposte a Pico con Bellanti e Pontano," *ibid.*, pp. 47–66.

accommodation of stellar transformations into not causes but signs. This in fact would be one of the most common justifications for astrological divination by the beginning of the Cinquecento, for instance, by Caspar Peucer, son in law of Melanchthon, in the treatise entitled *De diversis divinationum generibus*.¹⁰¹

Bellanti's defence was well-articulated and sustained by the most valid arguments that had ever been adduced by any previous defenders of astrology. He asserted, along with others before him (such as Pietro d'Abano in *Lucidator dubitabilium astronomiae*, 1303–1310),¹⁰² the learned, scientific aspect of astrology, insisting on its gnoseological rather than practical value, because based not only on the influence of the movements of the stars but on the starry canopy itself, in other words, mathematical astronomy. He rejected the magical image of the skies that saw them as being animated by spirits or divine entities, and he refused all the related magical and divinatory practices, the Hermetic connection, the introduction of pagan Hermetic astrology and the decans of the Sabians of Harran, the star worshipping inhabitants of the country of the queen of Saba¹⁰³ and the relevant magical influences traceable also in the pseudo-Ptolemaic *Centiloquium*. All of these had been condemned by the theologians as well as by the rational physicians of the time, such as Pietro d'Abano. The Hermetic astrology that was rediscovered in the second half of the 15th century due in part to of Ficino's new versions of the *Corpus hermeticum* introduced magical opinions into astrological prediction, founded on "images,"¹⁰⁴ and Bellanti renounces them deci-

¹⁰¹ Caspar Peucer, *Commentarius de praecipuis divinationum generibus* (Frankfurt: 1646).

¹⁰² Il *Lucidator* may be found in Pietro D'Abano, *Trattati di astronomia*, ed. G. Federici Vescovini, 2nd ed. (Padua: 1992).

¹⁰³ The inhabitants of Harran took the name of Sabians at the beginning of the 9th century. Their rites of adoration of the seven planets, especially the moon, with suffumigations, circulated around the Latin world through the works of Omar Tiberiade, a name referring to Umar ibn Farruhan al-Tabari, whose brief Latin text is published as "Liber de locutione cum spiritibus planetarum" by D. Pingree, "Al-Tabari, the Prayers to Planets", *Bulletin d'études orientales*, vol. XIV (Damas: 1993), pp. 105–117 (esp. 112–116); concerning the Hermetic rites, H. Corbin, "Le recit d'initiation et l'hermetisme en Iran", *Eranos Jahrbuch* 17 (1949), pp. 121–187; by the same, "Rituel sabéen et exegèse ismaélienne du rituel", *Eranos Jahrbuch* 19 (1950), pp. 181–246 (in particular pp. 192–194). M. Tardieu, "Sabiens coraniques et sabiens de Harran," *Journal asiatique* 274 (1986), pp. 1–44; J. Hjaerpe, *Les sabiens harraniens*, Uppsala, 1972; M. Green, *The City of the Moons God: Religions, Traditions of Harran* (Leiden – New York: 1992).

¹⁰⁴ Compare N. Weill-Parot, *Les images astrologiques au Moyen Âge et à la Renaissance, Spéculations intellectuelles et pratiques magiques (XII^e–XV^e)*, (Paris: H. Champion, 2002), in

sively. He thus radically repackages these magico-Hermetic elements found in Ptolemaic astrology, although the works he refers to largely belong to the anonymous medieval tradition.¹⁰⁵ These were Hermetic, magical, star-worshipping contaminations introduced by a few anonymous 11th century works that had been translated in the 13th century mainly by the circle of King Alfonso X of Castile, concealed in the Middle Ages along with the *Picatrix* magical text. They began to circulate in the Quattrocento and Marsilio Ficino knew about them. Bellanti thus returns to the medical, meteorological and physiognomical astrology aimed at individual fortunes, and exemplified by Ptolemy. This medical usage was one of the main objectives of Pico's criticism. Therefore Bellanti's *Responsiones* and *De astrologica veritate* contribute, against the arguments of Pico, against medieval medical astrology (which in his view reduced man to mere corporality), to the recovery of Ptolemy's pure teaching without the accretions deriving from the Arab commentators. There can obviously be no accord between religion and astrology in this line of thinking, because there is no trace in Ptolemy's original text of the conjunctionist doctrine regarding the horoscopes of religions (Bellanti points out), because this was a development of Arab astrology diffused in the 13th century Latin translations included with the comment of Alì (Ibn-Ridwan, also known as Haly). According to Bellanti, therefore, the use of the theory of the great conjunctions to explain the rise of the great religions was not part of authentic Ptolemaic astrology, which instead aimed simply to explain individual life events and not those of the world, and especially aimed to furnish useful elements for describing individual characters, the better to conserve their health. There is also no contrast between astrology and the Christian vision because astrology does not pretend to penetrate into the designs of God or to explain transcendent revealed truths. Indeed, it tends to avoid any errors that could be corrected by natural knowledge.¹⁰⁶ It does not foresee the births of the Prophets, which depends entirely on the divine will or may be made manifest by means of the angels. For these reasons alone the theses of Albumasar are unacceptable, not to mention the unpardonable fault of having placed all the religions on the same

particular pp. 647–847 and ff. concerning the influence of the astrological doctrine of the *De triplici vita* of Ficino on the *Opus clarissimum* of Giacomo Torrella.

¹⁰⁵ P. Lucentini, I. Parri, V. Perrone Compagni eds., *Hermetism from Late Antiquity to Humanism* (Turnhout: 2003).

¹⁰⁶ Lucio Bellanti, *Responsiones contra Picum* (Florence: 1498), libro V, fol. 196 and ff.

astronomical level (i.e., through the conjunctions), so Christianity was equal to Judaism and Islam.

Bellanti possessed an extraordinary knowledge of all previous astrology; but he was very cautious, also because of his religious preoccupations. Dealing with Christ's horoscope could border on blasphemy. He bitterly criticized one of the most widely diffused works of the time, Guido Bonatti's *Introduction to Astronomy* or *De iudiciis*, in part because it discussed the great conjunctions that supposedly preceded the births of the religions, and thus he distanced himself from doctrines that were in his view fallacious and erroneous especially considering the uncertainty and dubiousness of any endeavor to establish precisely the celestial coordinates, due to the precession of the equinoxes. Besides, Bonatti had launched fierce invectives against all theologians, those "cassock-wearers" who had attacked him for his daring ideas.

11. *Girolamo Cardano*

Fifteenth-century discussions did not regard only the problem of whether astrology was a science or a mere superstition, a dangerous magical vision verging on pagan star-worship, indeed, a magical cosmology with a cabalistic stamp (such as it would later appear to be, as Neoplatonism and Renaissance Hermeticism began to develop in the sixteenth and seventeenth centuries, with borrowings from Jewish Cabala, for instance, in the astronomical writings of the Christian cabalist Agostino Ricci, author of the treatise *De motu octavae sphaerae*,¹⁰⁷ where the heavens are identified with the Sephiroth). The 15th century discussions instead concerned the absurd pretense of attempting to find a confirmation for a supernatural event, namely, the Redemption of humanity, in the natural form of explanation given by astronomy and astrology.

Obviously, in all the discussions between the 14th and 15th centuries, the conjunctionist theory regarding the horoscopes of religions seriously complicated the question of finding a way to reconcile astronomical truth and biblical truth, notwithstanding the daring attempt of Pierre d'Ailly. The idea was not abandoned in the 16th century, however. Even though Giovanni Pico seemed to have demolished the scientific foundations of astrology with his criticism of the concept of Aristotelian causation and

¹⁰⁷ Augustinus Ricius, *De motu octavae sphaerae* (Paris: 1521); on him see F. Secret, *Les Kabbalistes chrétiens de la Renaissance* (Milan—Neuilly—Seine: 1985) (new ed.), pp. 81 and ff.

of the ontological distinction made by St Thomas Aquinas between necessary cause *per se* (God) and contingent cause *per accidens* (the heavens and Terrestrial events), in general the fortunes of the astrological conception of the world did not diminish throughout the entire Renaissance, in spite of censures and condemnations by theologians, largely because of the continuation, among many philosophers and scientists, of Aristotle's way of framing the concept of nature (*physis*), and the mathematical principles of Ptolemaic astronomy.

Thus between the end of the Quattrocento and for all of the Cinquecento among Aristotelian philosophers there flourished numerous collections of genitures, i.e., individual horoscopes,¹⁰⁸ of princes, popes and kings, especially the very successful collections by Gaurico, Giuntini, and by the medical scientist and astrologer Girolamo Cardano, the latter made all the more famous by the author's extraordinary personal story. Cardano's error, according to a document in the Holy Office Archives, published by Ugo Baldini, was not only in having attempted to attribute events to the stars, to the heavenly bodies and to fate, thus denying Divine Providence, the contingency of things and all religion, but in having attributed to this also the birth of Christ and His Wisdom.¹⁰⁹

This horoscope of Christ appeared in the first Latin edition of the Greek *Tetrabiblos* of Ptolemy, published in Basel in 1554,¹¹⁰ which Cardano presented along with a commentary he had long been preparing on the Greek edition by Antonio Gogava that had been printed in Leuven in 1548.¹¹¹ Cardano shared in the urgency felt by all of humanistic culture to have a reliable edition of Ptolemy's work, which had hitherto circulated in the Latin version of an Arabic text along with interpretations by some of his most famous followers including Albumasar, and especially Ali Ibn-

¹⁰⁸ J.P. Boudet, *Entre science et nigromance* (Paris: 2006), especially chap. VI, pp. 303–325; Id. *Les astrologues et le pouvoir sous le regne de Louis XI*, in *Observer, lire, écrire le ciel au Moyen Âge* (Actes du Colloque d'Orléans 22–23 avril 1989), ed. B. Ribémont (Paris: 1991), pp. 62; E. Poulle, *Orosopes princiers des XIV^e et XV^e siècles*, in *Astronomie planétaire au Moyen Âge latin*, Variorum Reprints (Aldershot: 1996), pp. VIII, 63–77. Concerning the famous geniture of Agostino Chigi depicted by Baldassarre Peruzzi on the walls of the Sala Galatea (1466) see F. Saxl, *La fede astrologica di Agostino Chigi*, in F. Saxl, *La fede negli astri*, Italian translation by S. Settis (Turin: 1985), pp. 305–412.

¹⁰⁹ U. Baldini, "Cardano negli Archivi del Santo Uffizio," in *Cardano e la tradizione dei saperi*, M. Baldi and G. Canziani ed. (Milan: 2003), p. 495.

¹¹⁰ See Ptolemy, *Tetrabiblos*, Greek text and Italian translation by S. Feraboli (Milan: 1983).

¹¹¹ G. Cardano, *In Claudii Ptolomaei de astrorum iudiciis aut ut vulgo appellant Quadripartitae Constructiones, libri IV Commentaria* (Basel: 1554), lib. II, textus 54, pp. 164–166.

Ridwan. Cardano hoped to renew astrological doctrine by bringing it back in line with the original Greek text and giving readers the “true” Ptolemy. He thus subtracted the text from a whole complex and bizarre tradition of Arabic procedures of dubious astronomical significance. He sought to put judicial astrology on a more rigorous scientific, or mathematical, basis, even though, like Ptolemy, he affirms that prediction does not pretend to any necessary, but only probable, validity. In this sense, just as he did as a physician, he drew more or less directly upon the astronomical teachings of the School of Padua from the end of the 13th century to the beginning of the 14th century, i.e., of that other philosopher-physician, Pietro d’Abano. The latter, in a treatise on astronomy entitled *Lucidator dubitabilium astronomiae*, had justified, using logical and philosophical arguments centered around the conception of *ars-scientia* in Aristotle’s *Nicomachean Ethics* book VI: 2–4, 1139–1141, the possibility of a scientific knowledge of medical prognostication and astrological judgment as medical prognosis of the contingent individual.¹¹² In Cardano therefore, astrology was presented as an art, a practical science, an instrument of active knowledge capable of guiding the work of the physician and the astrologer, and therefore able, by its predictive power, to divine at least partially the preordination hidden beneath events in nature, such as illness and the possibility of cure. The horoscope of Christ was removed from the posthumous edition of 1578 because of the condemnation, but was republished in the 1663 Lyons edition of the *Opera omnia*, edited by C. Spon. Cardano who defended his publication of the horoscope by suggesting that he knew the Divine Mind wished for some reason to have this important geniture divulged, adding cautiously that “I prepared it over twenty years ago but didn’t have the courage to publish it.”¹¹³

Cardano explains that he wanted the horoscope of Christ to be known so everyone would come to know how His nativity “was admirable, with the most grandiose concourse of all the heavens that signify pity, justice, faith, simplicity and charity” but no one should think he wished to suggest that Christ’s divinity and miracles, the holiness of his life and the propagation of his religion, somehow depended on the stars (*ab astris pendeant*). Instead, he wished to indicate that, just as “nature adorned his birth with an excellent temperament and extraordinary physical beauty, so also the

¹¹² G. Federici Vescovini, “La medecine synthèse d’art et de science selon Pierre d’Abano,” in *Les doctrines de la sciences de l’Antiquité à l’Âge Classique*, ed. R. Rashed and J. Biard (Leuven: 1999), pp. 211–236.

¹¹³ G. Cardano, *De astrorum iudiciis*, lib. II, textus 54, pp. 164–166.

Great and Glorious God adorned his birth with an excellent and admirable constitution in the stars."¹¹⁴ Indeed, he did not publish the geniture in his famous collection of *Genitures* but in his commentary on the second book of the *Tetrabiblos* dealing with world astrology, because the horoscope of Christ assumed a universal significance connected with the Christian religion and therefore belonged to the discussion of universal astrology there. In any case, what is particular about this geniture with respect to the preceding ones by Albumasar, Savasorda or Pierre d'Ailly, who did truly universal horoscopes of religions per se and not of the founders of religions, is that Cardano draws it up for precisely the hour of Christ's birth, as specified in the ecclesiastical calendar, i.e., on Christmas, so as to constitute the universal model of an individual horoscope.

This more cautious approach however did not characterize Cardano's expressions in some works he did before the time of the Ptolemy commentary, such as in the *De supplemento Almanach* or in the *Aphorismi*, works in which he accepted the notion of the correspondence between the great conjunctions and profane events such as the birth of kingdoms or religions. Putting the individual horoscope of Christ in the later commentary on the *Tetrabiblos* instead was supposed to establish the Arabic conjunctionist theory on firmer astronomical foundations, because he realized, as had all the more able astronomers before him (not just for religious or theological reasons), that the periods of the great conjunctions and the particular events depending on them were impossible to determine exactly.

In Cardano's attempt to reform Ptolemy's universal astrology we find, with respect to previous commentators, an effort to simplify world astrology by referring exclusively to general and universal movements of the eighth sphere with respect to the ninth sphere (on which depended the precession of the equinoxes and the resulting slight annual variation in the equinoxes and solstices). In other words, Cardano's treatment of Christ's horoscope expunged the Arabs' complex calculus of the conjunctions, connected with the triplicities, and he reorganized the entire system around the quadrants of the celestial sphere and the time when the eighth sphere's zero degrees in Aries returned to the ninth sphere's zero degrees. This latter eventuality would signify the maximum millenarian conjunction. In other words, Cardano conducts his whole reform of the *Tetrabiblos* on the basis of an exclusively astronomical calculation of the

¹¹⁴ G. Cardano, *De astrorum iudiciis*, lib. II, textus 54, p. 163.

apparent motion of the stars, the planets and the precession of the equinoxes. The birth of Christ thus is not explained by calculating the great conjunctions of the Arabs and their Latin followers, but by using the new astronomical tables of Regiomontanus.

Although he censored himself repeatedly when publishing his genitures, Cardano's work shows the difficulty of finding a balance between on the one hand, a physical-natural causality that seemed to subject free will to determinism, and on the other, the truth of a Christian religion rationally explained according to the orthodoxy of the period's doctrine.¹¹⁵

Cardano's writings as a physician and scientist seemed more concerned with nature than with revealed religion; and any religious aspect was consigned to the domain of pure faith. Moreover, his work was chronologically situated in the period of the destruction of Christian universalism, due to the spread of the Lutheran reform and the subsequent dogmatic closure of the Catholic Church with the establishment of the Holy Office and the modern Inquisition tribunals. Thus we begin to see the end of the difficult conciliation, attempted by medieval philosophers and theologians, on the basis of the Aristotelian doctrine, of instrumental, secondary, accidental and contingent causes (as for example in St Thomas), as against the universal cause *per se* relating to divine causation. The final nullification of this solution would occur not only due to the affirmation among Renaissance Neoplatonic and Hermetic philosophers of a demiurgic and magical concept of human dignity, removed from any material necessity, but especially because of the dissolution, due to Galileo's astronomical revolution and the affirmation of Newtonian mechanics, of the Aristotelian concept of a closed cosmos consonant with the astronomy on which Ptolemy founded his astrological doctrine. Nonetheless, since the geocentric astronomy of the *Almagest* on which the theoretical edifice of the *Tetrabiblos* was built, due to the ingenious geometrical artifice of the epicycles, corresponded exactly to the appearance of the phenomena, even if the geocentric hypothesis was wrong, the validity of the celestial tables of Ptolemy, with their successive corrections, never diminished in later centuries. Astrological predictions based on a millennial religious and scientific tradition continued their path through the future of humanity. They continued to respond to man's need to know

¹¹⁵ A. Grafton, *Cardano's Cosmos. The Worlds and Works of a Renaissance Astrologer* (Cambridge, Mass.: Harvard University Press, 1999); and for other interpretations see A. Ingegno, "Nuovi studi sull'opera di Cardano," in *Cardano e la tradizione dei saperi*, pp. 9–18.

the future, in the perennial general uncertainty regarding the universal horizons of his actions, wherein he remained the principal actor, rooted in the earth. The discipline was ever more opposed and reviled, but also strenuously defended by its supporters on the basis of these ancient scientific and religious traditions as well as the empirical confirmations cited by its practitioners.

CHAPTER FIVE

ASTROLOGY AND SOCIETY

William Eamon

It is the stars,
The stars above us, govern our conditions.

(Kent in *King Lear*, Act IV, sc. 3)

The biggest media event of the sixteenth century—perhaps of the entire early modern period—took place in 1523–24, when scores of astrologers leaped onto a bandwagon of collective hysteria by announcing the imminent end of the world. The final days, the astrologers pronounced, would occur as a result of a second Deluge brought on by a conjunction of the three upper planets, Jupiter, Saturn, and Mars, in the sign of Pisces.¹ Although it was already common knowledge among astrologers that the conjunction would take place in February 1524—thanks to an ephemerides, or table of planetary positions, printed in 1499—it was only around 1519 that the forecast began to generate widespread fear and animated debates among astrologers and theologians. Hundreds of almanacs and pamphlets foretold the flood. More than 160 works by 56 different authors weighed in on the dire prognostication, either by offering astrological evidence confirming the prophecy or denouncing it as a mad delusion.

News of the prophecy quickly spread through sermons and printed broadsides and almanacs. In January 1524 the Venetian chronicler Marin Sanudo reported that the mainland “is in great fear” over the impending catastrophe.² As intellectuals debated, people all over Europe frantically moved their places of residence in anticipation of the deluge. Rumor of a second deluge spread to Paris, while in Toulouse, a president of the

¹ Lynn Thorndike, *History of Magic and Experimental Science*, vol. 5, chap. 11 (New York: 1941); hereafter cited as *HMES*. See also Paola Zambelli, “Fino del mondo o inizio della propaganda? Astrologia, filosofia della storia e propaganda politico-religiosa nel dibattito sulla congiunzione del 1524,” in *Scienze, credenze occulte, livelli di cultura* (Florence: 1982), pp. 291–368.

² Marin Sanudo, *I Diarii (1496–1533). Pagine scelte*, ed. P. Maragoli (Milan: 1997), p. 435.



Figure 5.1: The great conjunction in Pisces, portending a second deluge. Leonhard Reynmann, *Practica vber die grossen und manigfaltigen Coniunction der Planeten* (Nuremberg: 1524).

parliament anxiously built an ark upon a mountaintop.³ Year by year as the dreaded date approached, apprehension increased and the prophecies grew more ominous. In a 1523 tract, the noted German astrologer Leonhard Reinmann predicted not only a great deluge but also a general uprising of peasants and common people.⁴ In Rome, there was general panic.

Of course, the great flood never materialized. Heavy rains fell in some parts of Italy, but civilization was not swept away by the floods that ensued. Other parts of Europe remained dry. Precipitation reconstructions for northern Europe in the 16th century indicate no unusual spikes for the year 1524.⁵ As far as the weather was concerned, for most of Europe it was an uneventful year. Yet the incident illustrates the extraordinary power that astrology and prognostication held over intellectuals and common people alike.

The failure of this prophecy, upon which so many astrologers staked their reputations, many scholars have argued, severely damaged the social authority of astrology. The German reformer Martin Luther, who adamantly opposed astrology, used the occasion to ridicule the astrologers for having predicted a great flood for the year 1524, "which, nonetheless, did not happen; yet in the following year, 1525, the peasants rose in rebellion. Of this, no astrologer had breathed so much as a word."⁶ Some historians have argued that the failed 1524 prophecy was one of the signal events determining the demise of astrology.⁷

If that was the case, astrology's end was a long time in coming. Signs in the heavens continued to convey deep significance down through the end of the 17th century. As late as 1682, a great conjunction of Jupiter and Saturn produced a flood of treatises predicting great mutations in the

³ Denis Crouzet, *Les guerriers de Dieu: la violence au temps des troubles de religion, vers 1525-vers 1610* (Seyssel: 2005), pp. 112-3.

⁴ Robin Bruce Barnes, *Prophecy and Gnosis. Apocalypticism in the Wake of the Lutheran Reformation* (Stanford: 1988), p. 143. Reinmann was not so far off: the German Peasant's Revolt broke out in 1525.

⁵ Andreas Pauling et al., "Five Hundred Years of Gridded High-Resolution Precipitation Reconstructions over Europe and the Connection to Large-Scale Circulation," *Climate Dynamics* 26 (2006): 387-405.

⁶ D. Kurze, "Prophecy and History: Lichtenberger's Forecasts of Events to Come (From the 15th to the 20th Century): Their Reception and Diffusion," *Journal of the Warburg and Courtauld Institutes* 21 (1958): 63-85, p. 70. Of course, Luther was wrong: The German astrologer Leonhard Reinmann had predicted the Peasants' Revolt (see n. 4). Only no one, not even Luther, had noticed Reinmann's prophecy until after the revolt had taken place.

⁷ Ottavia Niccoli, *Prophecy and People in Renaissance Italy*, trans. Lydia G. Cochrane (Princeton: 1990).

secular and ecclesiastical worlds.⁸ Astrology flourished in early modern society because it made sense to people and offered the power to predict the future in uncertain times.

Heavens and Earth: Astrology in Everyday Life

Despite its intellectually demanding theoretical foundations and complex observational requirements, astrology was not a science just for the educated classes. The idea that the planets and stars transmitted qualities that influenced earthly events was ingrained in popular culture. Although few dared go as far as to say that the stars determined human destiny—such a claim would have been considered heretical—no one denied the influence of the heavens upon the weather or disputed the relevance of astrology in medicine or agriculture.

Scientific astrology—though linked to a tradition going back to the ancient Babylonians—was rare in Europe until the 12th century, when scholars revived the ancient Greek astronomical and astrological texts (through the medium of Arabic) and translated them into Latin. Yet even without the ancient scientific texts, popular forms of astrology flourished in the city and countryside alongside the learned astrology taught in the universities. For the most part, popular astrology comprised lore about the phases of the moon rather than the motions of other heavenly bodies—for the obvious reason that the moon was more visible to the naked eye than the planets. Early medieval charts told which days of the lunar cycle were good or bad for various activities. Heavenly events such as thunder also foretold the future. The direction from which a thunderclap came, when it was heard, and the sound it made were all read as portents affecting everyday life: thunder in January meant strong winds, while thunder heard in December portended a rich harvest.⁹

Such simple, nonscientific forms of astrology survived long past the introduction of scientific astrology into the West. The German Protestant minister Johannes Coler (1566–1639) noted that in early modern Germany peasants believed that a child born under a new moon—especially one

⁸ Sarah Schechner Genuth, *Comets, Popular Culture, and the Birth of Modern Cosmology* (Princeton: 1997), p. 80; Germana Ernst, "From the Watery Trigon to the Fiery Trigon: Celestial Signs, Prophecies and History," in Paola Zambelli, ed. *'Astrologi hallucinati': Stars and the End of the World in Luther's Time* (Berlin: 1986), pp. 265–80.

⁹ Richard Kieckhefer, *Magic in the Middle Ages* (Cambridge: 2000), p. 86.

that coincided with the Sabbath—would develop and prosper with a waxing moon, while a full moon that waned as an infant grew older portended weakness, disease, and death.¹⁰ The moon's phases also held significance for medicine. A 15th century English text warned, "When thou takest a cure, be it of physic or of surgery, take notice of the moon, and of the time when the sickness took and in what sign it began."¹¹

Folk healers gathered herbs during specific phases of the moon depending on how they would use the plants. In Wallonia, they picked rue for a sore throat cure during a waxing moon and, to use it as an abortifacient, during a waning moon.¹² Eclipses were especially portentous. "These late eclipses in the sun and moon portend no good to us," says Gloucester in Shakespeare's *King Lear*. "Love cools, friendship falls off, brothers divide; in cities, mutinies; in countries, discord; in palaces, treason; and the bond crack'd 'twixt son and father."¹³

The Making of the Astrologer

When we think of astrology today, all sorts of negative images come to mind, from the banal horoscope columns in daily newspapers to New Age witches and pagans caught up in a world of make-believe. Yet in the Renaissance, astrology was regarded as a serious science. Many scholars maintained that it was the highest of sciences. Astrology assisted theology, medicine, history, and prophecy. Above all, it answered questions that pertained to everyday life.

In the early Renaissance, almost all professional astrologers were university educated. Many held positions in the courts of princes and popes.¹⁴ Though roundly condemned by the patristic authors and enormously controversial throughout the Middle Ages, astrology nevertheless became a

¹⁰ Stephen Wilson, *The Magical Universe. Everyday Ritual and Magic in Pre-Modern Europe* (London: 2000), p. 201.

¹¹ Carol Rawcliffe, *Medicine & Society in Later Medieval England* (London: 1995), p. 87.

¹² Wilson, *Magical Universe*, p. 340.

¹³ Shakespeare, *King Lear*, Act I, scene 1.

¹⁴ Alexander Murray, *Reason and Society in the Middle Ages* (Oxford: 1978), p. 208. In addition, see Monica Azzolini, "The politics of prognostication: astrology, political conspiracy and murder in fifteenth-century Milan," in *History of Universities* 23 (2008): 6–34; idem, "The Political Uses of Astrology: Predicting the Illness and Death of Princes, Kings and Popes in the Italian Renaissance," *Studies in History and Philosophy of Science* 41 (2010): 135–145; and idem, *The Duke and the Stars: Astrology and Politics in Renaissance Milan* (Cambridge, Mass.: Harvard University Press, 2012).

regular part of university study and teaching. So popular had the subject become among professors and students at Paris that in 1277 the bishop of Paris, Etienne Tempier, found it necessary to include astrology among the 219 propositions that must not be taught in the university. Particularly repugnant to the Church was astrology's fatalism and the notion that the stars influenced the soul or the human will. Yet Tempier's condemnation had little impact on the growth of astrology. Despite forceful critiques by scholastics, the practice and teaching of astrology flourished. Even at Paris, despite Tempier's condemnation, professors gave lectures on astrology in courses they taught on the margins of the academic program—in private homes, on feast days, or in the hours reserved for “extraordinary” lectures on subjects not included in the regular curriculum.¹⁵

Any university student in the 14th and 15th centuries would be expected to complete courses in the seven liberal arts: grammar, rhetoric, dialectic, arithmetic, geometry, astronomy, and music. Following Ptolemy's *Tetrabiblos*, university masters included both astronomy and astrology in the “science of the stars”—a body of courses embracing the “science of movements” (astronomy), which taught how to describe and predict the movements of the heavenly bodies, and the “science of judgments” (astrology), which concerned the influence of the heavens upon human affairs.¹⁶ In addition to being familiar with basic astronomical works such as the widely used textbook *De sphaera* (On the Sphere) of Johannes de Sacrobosco, arts students would also have had some familiarity with astrological theory, which they might have learned from a text like the popular *Liber introductorius* of the 4th century Arabic author al-Qabīṣī, known in the West as Alcabitius.

The humanist movement brought an entire new body of astrological literature into the picture. While medieval astrology relied on Arabic authorities, the humanists introduced European scholars to a large corpus of Greek magical and astrological texts, mainly stemming from Hellenistic authors. In particular, the Hermetic Corpus (*Corpus Hermeticum*), an eclectic collection of Greek philosophical and magical writings that most humanists believed comprised the work of Hermes Trismegistus, a

¹⁵ Richard Lemay, “The Teaching of Astronomy in Medieval Universities, Principally at Paris in the Fourteenth Century,” *Manuscripta* 20 (1976): 197–217. Joan Cadden, “Charles V, Nicole Oresme, and Christine de Pizan: Unities and Uses of Knowledge in Fourteenth-Century France,” in *Texts and Contexts in Ancient and Medieval Science*, ed. Edith Sylla and Michael McVaugh (Leiden: 1997), pp. 208–44 and 212–13.

¹⁶ Eugenio Garin, *Astrology in the Renaissance. The Zodiac of Life*, trans. C. Jackson and J. Allen (London: 1983), pp. 1–2.

Greek version of the Egyptian god Thoth (but in fact written in the first centuries of the Christian era), caught fire in the Renaissance.¹⁷ The *Hermetica*, which had been introduced into Europe in the 15th century, were replete with astrology and magic. As a result, technical astrology reached its zenith in Europe in the early modern period.

The hermetic writings brought to the forefront the tension—present throughout the Renaissance—between astrological determinism and human freedom, generating a contentious debate that lasted throughout the early modern period. In 1495, Giovanni Pico della Mirandola wrote a scathing denunciation of astrology, *Disputationes adversus astrologos*. Consistent with the dominant theme of his philosophy, Pico's condemnation of astrology was grounded upon a defense of human freedom against astral determinism.¹⁸ His influential treatise was the most sweeping Renaissance critique of the foundations of astrology.

Though widely read, Pico's critique had little impact on the practice of astrology. Despite Pico's stature as a philosopher, refutations of his anti-astrological tract by academic and professional defenders of astrology poured in for decades. From as far away as Würzburg, in a work printed in 1502, the medical professor Jakob Schonheintz defended astrology against Pico's attack.¹⁹ Astrological texts continued to enjoy wide popularity and were among the earliest printed books.

At least since the mid-14th century, astrology had been a standard part of the curriculum of most European universities. Courses on astrology were regularly given at almost all the Italian universities down through the 17th century. The famous astrologer Luca Guarico (1476–1558) founded a school of astrology at Ferrara that attracted many pupils, while Bologna boasted distinguished professors of astrology, including Copernicus's teacher Domenico Maria Novara (1454–1504), who taught astrology at the university as *professor ordinarius* since 1483.²⁰ Astrology was also part of the curriculum of the Spanish universities. At Salamanca, a chair of astrology was founded in 1561 and occupied for many years by the distinguished

¹⁷ Brian P. Copenhaver, *Hermetica: The Greek Corpus Hermeticum and the Latin Asclepius in a new English translation, with notes and introduction* (Cambridge: 1992). There is a very large literature on the hermetic tradition in the Renaissance, beginning with Frances A. Yates, *Giordano Bruno and the Hermetic Tradition* (Chicago: 1964).

¹⁸ On Pico's refutation of astrology, see Garin, *Astrology*, pp. 83–93.

¹⁹ Thorndike, *HMES*, 4: 542–3.

²⁰ Thorndike, *HMES*, 5: 167–8, 234–51.

Valencia astronomer Jerónimo Muñoz (1520–1591).²¹ Chairs of astrology were also established at the universities of Alcalá de Henares and Valencia.²² Even after Pope Sixtus V condemned the teaching of astrology in the bull *Coeli et terrae* (1586), professors at the Jesuit university of Santo Antão in Lisbon continued to teach courses on judicial astrology. Dismissing arguments against astrology, one professor asserted that the bull only condemned “false and superstitious astrology,” not the legitimate and strictly natural sort.²³

Almost every medical school in the Renaissance had courses in astrology. Medical students were required to take astrology because, as the physician John of Burgundy wrote in a 1365 medical treatise on the plague, “Everything below the moon, the elements and the things compounded of the elements, is ruled by the things above, and the highest bodies are believed to give being, nature, substance, growth and death to everything below their spheres. It was, therefore, by the influence of the heavenly bodies that the air was corrupted and made pestilential.”²⁴ Since each part of the human body was ruled by a particular sign of the zodiac, it was therefore the physician’s duty to understand how to read the heavens so as to prescribe drugs at the most propitious moment or to order phlebotomies to be done in the proper location and at the proper time.²⁵

In the 16th century, nearly all of Europe’s leading astrologers were university educated. John Dee (1527–1609), England’s most prominent 16th century astrologer, had gone to Cambridge. No back-street quack, Dee was the confidante of Queen Elizabeth and gave advice to a number of her ministers. In Italy, most mathematics professors taught astrology.

²¹ Victor Navarro Brotóns, “La actividad astronómica en la España del siglo XVI: perspectivas historiográficas,” *Arbor* 117 (1992): 185–216; idem, “The Cultivation of Astronomy in Spanish Universities in the Latter Half of the 16th Century,” in *Universities and Science in the Early Modern Period*, ed. Mordechai Feingold and Victor Navarro Brotóns, *Archimedes*, vol. 12 (Dordrecht: Springer, 2006), pp. 83–98. On astrology in Spain, see Tayra Lanuza Navarro, *Astrología, ciencia y sociedad en la España de los Austrias*, Tesis Doctoral, University of Valencia (Valencia: 2005).

²² Victor Navarro Brotóns, “Matemáticas y Astronomía,” in M. Peset, ed. *Historia de la Universidad de Valencia*, vol. I (Valencia: 1999); Lanuza, *Astrología*. For astrology at the University of Vienna, see Darin Hayton, “Instruments and Demonstrations in the Astrological Curriculum: Evidence from the University of Vienna ca. 1500,” *Studies in History and Philosophy of Science* 41 (2010): 125–134.

²³ Henrique Leitão, “Entering Dangerous Ground: Jesuits Teaching Astrology and Chiromancy in Lisbon,” in *The Jesuits II: Cultures, Sciences, and the Arts 1540–1773*, ed. John W. O’Malley, et al. (Toronto: 2006), pp. 371–89.

²⁴ Rosemary Horrox, ed., *The Black Death* (Manchester: 1994), pp. 184–5.

²⁵ See Chapter 8: “The New Astral Medicine.”

Giovanni Antonio Magini (1555–1617), who held the chair of mathematics at the University of Bologna from 1588 (he was chosen over Galileo), was one of Italy's leading proponents of astrology and was the author of an important treatise “modernizing” astrology, *De astrologica ratione* (Venice, 1607). Magini also served as court astrologer to the Dukes of Mantua. Even almanacs, which would eventually become pulp literature, were written by university graduates and carried the imprimatur of humanistic learning. The very first book that the immensely learned Girolamo Cardano (1501–1576) published was an astrological prognostication. Astrology and astronomy were seen as sister disciplines commanding equal respect.

By the mid-17th century, however, astrology could claim no leading scientific figures such as Cardano, Muñoz, and Galileo. 17th century authors of astrological publications tended to have much less formal education than astrologers typically had in previous centuries. In fact, many were completely innocent of any astrological knowledge at all. Even the notorious “Doctor” John Lambe, an English astrologer who served the Duke of Buckingham and claimed that he could read fortunes and locate missing or stolen items with his crystal ball, proved, when examined by the Royal College of Physicians in 1627, to be ignorant of the astrological sciences he professed to practice.²⁶

Such pretenders were common in the 17th century, due in part to a changing medical marketplace that brought scores of unorthodox healers onto the scene. Equally important was the availability of cheap printed handbooks and guides that taught the rudiments of casting horoscopes and nativities. Hundreds of thousands of almanacs and ephemerides streamed from the presses in the 16th and 17th centuries. Added to that outpouring of texts were scores of books on conjuring, prognosticating, and forecasting that used astrological methods. The English astrologer Stephen Trufelacke, who was tried in 1591 for conjuring, had an extensive reference library of astrological and magical books, including two ephemerides, a copy of the book *Arcandum* (a translation of the *Judgement of Nativities* [*Jugements astronomiques sur les nativités*, Lyon, 1550] by the French astrologer Auger Ferrier), and miscellaneous formulae such as

²⁶ Thomas, *Religion*, p. 303. Charles C. Gillispie, “Physick and Philosophy: A Study of the Influence of the College of Physicians of London Upon the Foundation of the Royal Society,” *Journal of Modern History*, 19 (1947): 210–25, p. 212. Lambe was active in the London area from approximately 1608 to 1628. There is a contemporary, anonymous biography of Lambe: *A briefe description of the notorious life of Iohn Lambe otherwise called Doctor Lambe. Together with his ignominious death* (London: 1628).

"figures to know how long one shall live & whether they shall obtain the treasures hoped for; figures to know the things lost; a book of conjuration for divers things; a conjuration to find hidden treasure, a conjuration at mixture of metals; sundry conjurations of raising of spirits & binding them; . . . a figure to know whether a man be dead or alive, or whether he has another wife; to obtain the love of any woman."²⁷ By the 17th century, astrology had fallen on hard times; yet, despite ridicule of the art by satirists and philosophers, people continued to seek the advice of astrologers.

The Astrologer and His Clients

Visiting a Renaissance astrologer in his consulting room was an experience not unlike that of a modern patient keeping an appointment with a physician. Entering the astrologer's chambers, a client encountered powerful symbols of the astrologer's professional authority. Like the books and instruments in the modern doctor's office, those in the astrologer's consulting room created a similar aura of expertise. An ephemeris, or table of planetary motions, which the astrologer used to calculate the positions of planets, might have been prominently displayed on the desk. Other essential reference works would have been ready at hand, including an almanac and various medical treatises. An image of a zodiac man might have decorated one of the walls of the room. Like the exploded illustrations of the muscular system or inner ear on the wall of a modern doctor's examination room, such images were meant both to inform and to impress. The astrologer might also have a mechanical clock and an astrolabe, which he used to make precise measurements of the moment at which he cast a nativity. On a table nearby might have stood an armillary sphere, an impressive metal instrument consisting of a spherical framework of rings, centered on Earth, representing lines of celestial longitude and latitude and other astronomical features. The armillary sphere was a model of the heavens in miniature, and the astrologer used it both to calculate natiivities and to make an impression on his clients. (See Figure 5.2).

The comparison of the astrologer's chambers with a modern physician's examination room seems apt on several accounts. Like modern medicine, astrology in the Renaissance was not a science, though it was based on

²⁷ W. Barrett-Davis, "A Conjuror's Library," *Notes and Queries*, 4th ser., 3 (1869): 103.

ASTROLOGASTER,
OR,
THE FIGVRE-CASTER.

Rather the Arraignment of Artlesse Astrologers, and Fortune-tellers,
that cheat many ignorant people vnder the pretence of foretelling things to
come, of telling things that are past, finding out things that are lost, &c.
pounding Dreames, calculating Deaths and Natiuities,
once againe brought to the Barre,

By Iohn Melton.

Cicero. *Stultorum plena sunt omnia.*



Imprinted at London by Barnard Alsop, for Edward Blackmore, and are
to be sold in Pauls Churchyard, at the Signe of the
Blazing-Starre. 1620.

Figure 5.2: Frontispiece to John Melton, *Astrologaster* (1620). The astrologer holds an armillary sphere in his right hand and a "mathematical glass" in his left.

evidence produced by sciences such as astronomy. Nor was it a branch of mathematics, though it shared much common ground with mathematics and used its methods on a regular basis. Some of the most prominent astrologers of the 17th century—William Lilly, for example—had no formal training in astronomy or mathematics. Nor was astrology a religion, though astrologers often weighed in on the religious issues of the day and sometimes prophesied momentous religious transformation. It was not meteorology or psychology, either, though some astrologers were adept at both—some even claiming “psychic” abilities. Rather, astrology was a rigorous divinatory and prognostic art embodying centuries of accreted methodology and tradition, the continuity of which was unmatched in the European intellectual tradition.²⁸ Like a modern doctor, the astrologer read signs and symptoms—though not in the body, but in the heavens—and strived to make a prognosis.

The description of a client visiting an astrologer’s consulting room from John Melton’s satirical work, *The Astrologaster* (1620)—though meant to ridicule the astrologer’s pretentious demeanor—captures something of the wonder and awe that people felt when entering the astrologer’s chamber:

Before a square table covered with a green carpet, on which lay a huge book in folio, wide open, full of strange characters, such as the Egyptians and Chaldeans were never guilty of; not far from that, a silver wand, a surplus, a watering pot, with all the superstitious or rather feigned instruments of his cozening art. And to put a fairer color on his black and foul science, on his head he had a four-cornered cap, on his back a fair gown (but made of a strange fashion), in his right hand he held an astrolabe, in his left a mathematical glass. At the first view, there was no man that came to him (if he were of any fashion) could offer him for his advice less than a Jacobus and the meanest half a pence, although he peradventure (rather than have nothing) would be contended with a brace of two-pence.²⁹

The astrologer was an expert in reading the stars and, for much of the period, commanded all the respect that other experts were accorded.

Even as astrology’s prestige relative to other sciences and professions declined in the 17th century, astrologers continued to offer early modern people valued “scientific” advice and help in resolving personal, profes-

²⁸ Ann Geneva, *Astrology and the Seventeenth-Century Mind: William Lilly and the Language of the Stars* (Manchester: 1995), p. 9.

²⁹ John Melton, *Astrologaster, or The Figure-Caster* (London: 1620), p. 8 (spelling and punctuation modernized).

sional, and family problems. Early modern people turned to astrology for a variety of reasons, but above all because they regarded astrologers as experts in matters concerning daily life. In the absence of effective police forces, pregnancy tests, and the like, astrologers filled many of the roles that modern experts perform. They provided pre-natal advice, including predictions about the number of children a woman would give birth to, and were often peoples' only recourse for finding lost objects, determining whether a woman was pregnant, or whether a child would be male or female. As criminologists, astrologers informed clients of everything from a thief's appearance to where to look for stolen valuables. They acted as matchmakers and marriage counselors, determining whether a sweetheart really loved a client, whether a woman was still a virgin, or whether a man was cheating on his wife. Astrologers even acted as investment counselors, giving advice on where to put one's money and when might be the best time to buy or sell.

Astrology also played an important role in medicine, which used astrological methods to determine the proper times to prescribe drugs, perform phlebotomies, and other medical functions. Astrologers even provided advice on when to pray. Princes made wardrobe decisions based on astrology: thus, Leonello d'Este, the marquis of Ferrara, followed the advice of his court astrologer by wearing clothes of a color chosen to draw down favorable celestial influences.³⁰ In his comprehensive how-to book on astrology, *Christian Astrology*, the 17th century English astrologer William Lilly revealed the wide variety of questions that might be put to the astrologer from "querents," ranging from "If the querent shall be rich" to "Whether the querent shall have children"; or the client might ask, "To what parts the thief has gone" or "If one shall return safe from war or a dangerous voyage."³¹ Quite simply, astrology gave answers to questions that still vex humans.

Consulting an Astrologer

When Renaissance clients consulted astrologers, they were asking for a "judgment," or astrological prediction, whether of a propitious time for a specific undertaking or, simply, an overall outlook for the future. The

³⁰ Anthony Grafton, *Cardano's Cosmos. The World and Works of a Renaissance Astrologer* (Cambridge, Mass.: 1999), pp. 9–10.

³¹ Geneva, *Astrology*, pp. 62–3.

astrologers' predictions were grounded in the belief that each planet—Mercury, Venus, Mars, Jupiter, Saturn, the Sun, and the Moon—had particular characteristics (loosely corresponding to the ancient god after whom it was named) that determined its influence on human affairs. Thus Saturn, by nature cold and dry, had malevolent influences and was melancholic in temperament; whereas Jupiter, which was warm and moist, was a fortunate planet, sanguine in temperament and portending bounty and riches. Mars's evil influence, a result of its hot and dry nature, could incite people to anger, war, and violence. The Sun, though also hot and dry, was more benevolent than Mars. Venus was a feminine, airy (hence hot and moist), and fortunate planet—though phlegmatic in temperament and linked with sensuality. Mercury, true to its protean nature, was changeable, taking on the qualities of other planets that influenced it. Finally, the moon, a watery (hence cold and moist) planet, had an especially powerful influence during one's infancy, and was sometimes associated with madness (hence "lunacy").³²

So much for the basic and general planetary influences. The specific effects of the heavens depended upon the planetary configurations at a given moment in time. As the seven planets travel along the zodiac—the circle of twelve divisions of celestial longitude centered on the ecliptic, or apparent path of the Sun—they pass through twelve successive signs, each with its own particular characteristics. The signs of the zodiac were in turn divided among four "triplicities" or trigons (groupings of three signs), each corresponding to one of the elements. The fiery trigon, consisting of the signs Aries, Leo, and Sagittarius, was ruled by the Sun by day and Jupiter by night. Venus and the Moon ruled the earthy triplicity, containing Taurus, Virgo, and Capricorn. The airy triplicity, under Saturn and Mercury, was made up of Gemini, Libra, and Aquarius. Finally, the watery trigon, under the dominion of Mars, comprised Cancer, Scorpio, and Pisces.

Astrologers provided four main types of judgments: general predictions, nativities, elections, and interrogations. A *general prediction*, or "revolution," usually calculated annually, looked at the stars' effects on society as a whole and forecast such events as the weather, plague, war, famine, or the fortune of states. The most important factor in drawing up a revolution was the position of the heavenly bodies at the beginning of

³² For a more detailed discussion, see Laura Ackerman Smoller, *History, Prophecy, and the Stars. The Christian Astrology of Pierre D'Ailly, 1350–1420* (Princeton: 1994), pp. 16–22.

the year. A *nativity chart*, by contrast, mapped the position of the planets at the moment of a person's birth and was designed to predict the general characteristics, personality, and fortune of the subject. Nativities were often calculated retrospectively, based on the major events, or "accidents," in a person's life.

In the third type of judgment, the *election* (also known as the favorable hour), the astrologer determined the best time for a specific undertaking, such as embarking on a journey, getting married, letting blood, or making an amulet. The astrologer calculated the election by determining the position of the planets at a person's birth and projecting their motions forward in time. Finally, in an *interrogation*, or "horary" question, the astrologer used his knowledge of the stars to answer a client's specific query, basing his calculation on the moment at which the client asked the question. General prognostications, such as the kind of predictions that would appear in almanacs, were considered natural astrology, a subject that, in itself, drew little criticism or debate—although the prognostications themselves were often highly controversial. Nativities, elections and interrogations, on the other hand, belonged to the realm of judicial astrology. Because they related to the fate of individuals, this was the aspect of astrology that theologians and natural philosophers most vigorously contested.

The horoscopes that Renaissance astrologers drew up bore almost no relation to the modern, stripped-down versions encountered in the "Daily Horoscope" columns in many of today's local newspapers. It was hardly a simple matter to compute which celestial influences would dominate an individual, and no one imagined that it was possible to create a "one size fits all" horoscope. Horoscopes were important; people made life decisions based on them. Everyone in the Renaissance—including the astrologer's clients—knew that the astrologer could not simply base a nativity on the dominant sign of the zodiac at the time of the client's birth.

Computing a horoscope was a complex process. In addition to establishing the positions of the planets within the zodiac, the astrologer also had to determine the relation of the heavens to a particular point on earth such as the place of birth. To do that, he partitioned the zodiac into twelve arbitrary divisions or "houses," each approximately 30° long and each represented by an animal or other symbol. Each house was supposed to govern a particular aspect of a person's life. As a planet traveled through the sky, it would traverse all twelve houses in succession. The area of life the planets influenced would depend upon which house they were in at a given time. Thus, a planet in the first house influenced one's personality

and course of life in general. The second house signified wealth and property. A planet in the third house related to the character of one's siblings. Other houses indicated aspects of spousal or parental relationships, voyages, career and reputation, friends and hopes, health, enemies, and so forth.³³ The planet that had the greatest influence in a particular house indicated how one might expect to fare in that aspect of a person's life.

In the case of medical consultations, the houses had somewhat different indications. The first house, called the house of life, represented the person who was ill; the second represented the relationship between the patient and the physician (for example, whether the physician would be paid well); and so on through houses that represented the third party when the consultation was being made on behalf of another person; medicines; the four physiological virtues (attractive, attentive, digestive, exclusive); the infirmity; life and death; the physician; God (showing whether the disease was supernatural); the time to begin a cure; and whether a disease had natural or unnatural cures, such as witchcraft.³⁴

In constructing a horoscope, the astrologer had to complete three tasks. First, he had to determine the positions of the planets at the moment in question, whether the time of one's birth, the moment at which a person asked a question, or the time of the onset of an illness. To accomplish this, the astrologer would not ascend to his rooftop to measure the positions of the stars. The chances are that he would not have known what to look for. Unlike modern astronomers, astrologers were not observational scientists. They did not peer into the heavens for the data they needed to determine judgments. Instead, they consulted an ephemeris (a table of planetary positions) to ascertain the general positions of the planets. Then, using a calculating device such as an astrolabe, the astrologer would make a precise measurement of the time at which he cast the nativity.

Next, the astrologer had to calculate the relation of the zodiac to the astrological houses. Finally, the astrologer had to combine these two sets of information in an astrological diagram, the horoscope—essentially an illustration of the configuration of the heavens at a given time and relative to a fixed point on earth. Once the important calculations were made, “casting” the horoscope was a fairly routine procedure whereby the astrologer sketched the horoscope on a template consisting of a series of

³³ Kieckhefer, *Magic*, p. 126.

³⁴ Lauren Kassel, *Medicine & Magic in Elizabethan England. Simon Forman: Astrologer, Alchemist, & Physician* (Oxford: 2005), pp. 132–3.

triangles with a square at the center. The triangle at the nine o'clock position represented the first house, and from that position, proceeding counterclockwise, the remaining houses were drawn. The astrologer plotted the planets' positions using conventional symbols, for example: the Sun (☉), Jupiter (♃), Saturn (♄), Pisces (♓), Sagittarius (♐), and so on. Once the astrologer had drawn the horoscope, he could project the calculations into the future to make a judgment about forthcoming events.³⁵

Renaissance astrologers drew upon a long-established tradition of standard techniques for computing horoscopes. Collections of nativities, which existed both in print and manuscript, provided countless examples. The conventional Renaissance horoscope looked much like Girolamo Cardano's nativity of the famous Belgian anatomist Andreas Vesalius, which Cardano published in his *De supplemento Almanach* (1547; Figure 5.3). The chart, a geniture, depicts the twelve houses at the moment of Vesalius's birth, which in the horoscope indicates was 30 December 1514 at 5:45 am. In the text accompanying the figure, Cardano writes, "all the stars agree exactly" that Vesalius's fame was foretold:

For Mars in quadrature with the full moon in octant assures assiduousness in study and agile hands. Mercury in trine with Jupiter, and Venus in quadrature indicate wonderful genius and eloquence as related to his art, or even beyond it. He is an illustrious physician. The moon in opposition to the Sun gives memory, science, and many enemies, but at the same time makes one famous. Because it is a night star Saturn with the heart of Scorpio in the sextiles of Mercury indicates profound ability, memory, and assiduousness. The Spica of Virgo in the midst of heaven indicates fame in his art, as much for him as for any other person. Observe also that Mars is looking at the sun shining in all its glory, and also the moon standing in her own house. These indicate favor with princes.³⁶

Whether having visited the astrologer for advice about a prospective marriage (the customer's own or, perhaps, that of a daughter), to determine a propitious time to take a journey, or to obtain a geniture for his newborn son, the client left the astrologer's chamber with valuable advice about the future and, if the visit was for a geniture, a document that could serve for many life decisions. Properly interpreted, the horoscope would forewarn a client of potential threats to his career or fortune, and might provide

³⁵ The most comprehensive and detailed discussion is J.D. North, *Horoscopes and History* (London: 1986).

³⁶ Translation by Harry Friedenwald, "Cardanus' Horoscope of Vesalius: An Early Copy," *La Bibliofilia* 35 (1933): 421–30, pp. 422–24 (with minor alterations).

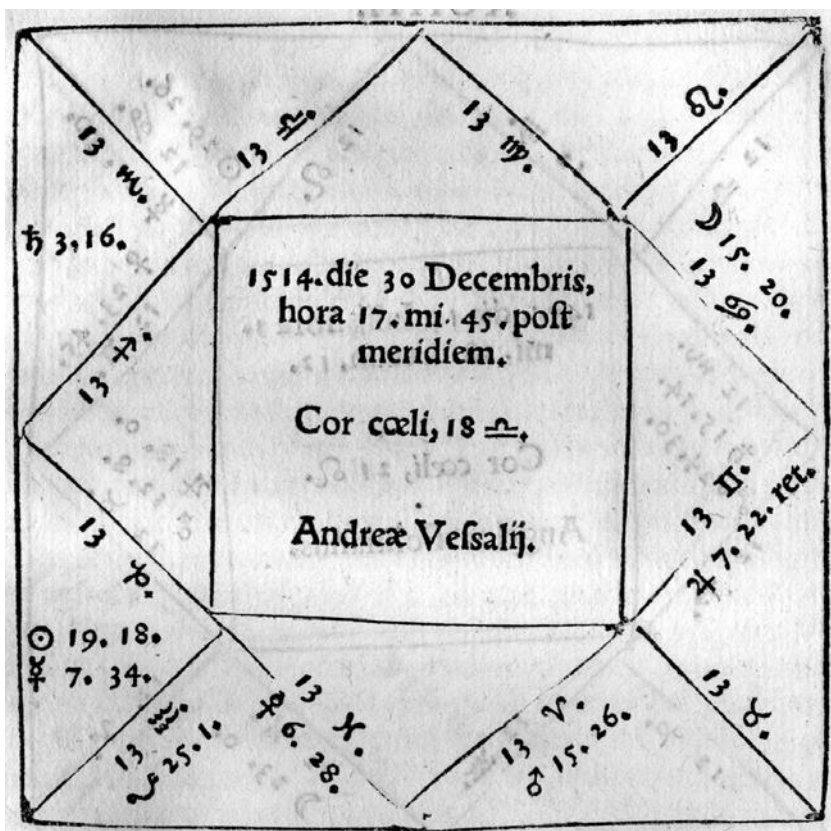


Figure 5.3: Girolamo Cardano's Horoscope of Andreas Vesalius
(Courtesy of the Clendening History of Medicine Library, University of Kansas Medical Center)

information that could prepare him for family quarrels or for marriage. He might have answers to a specific question, such as whether to buy or sell property, when to take a journey, or when might be the best time to start a business. There was not much that a client could do to avert an astrological prediction; but at least he would have the comfort of knowing how to prepare for the future, whatever it might bring.

The Astrologer's Practice

Complex though the process of casting horoscopes and genitures was, a skilled astrologer could accomplish the task in a matter of minutes. Simon

Forman, who practiced in London and Lambeth from 1592 until his death in 1611, was famous for the number of clients he served. During the 1590s, more than 2,000 clients per year consulted Forman. His skill was legendary. Upon receipt of a question from a client, he would record the exact moment at which it had been asked, then proceed with his calculations and announce his findings. The entire process might have taken less than fifteen minutes.³⁷

Six volumes of Forman's casebooks survive, containing approximately 10,000 consultations between 1596 and 1601. His clients included courtiers and their mistresses, merchants and their wives and servants, clergymen, actors, and ordinary people worrying about their health or seeking stolen property.³⁸ Nor was Forman exceptional in terms of the number of clients who consulted him. His contemporaries Richard Napier, William Lilly, and John Booker each recorded more than a thousand consultations per year.³⁹ Successful astrologers such as Forman handled an enormous volume of business. What kinds of inquiries did they deal with? What did people want to know?

Most of Forman's cases dealt with medical issues, and the complaints ran the gamut from toothache to nausea and from internal pains to "grief & cold."⁴⁰ One of Forman's patients, a woman named Brigit Allen, consulted him five times in 1596 for a mysterious ailment. Forman concluded that Allen was suffering from the symptoms of a false pregnancy complicated by "natural melancholy." Asked whether she would get better or not, Forman recorded a judgment based on the presence of Saturn in the fifth, sixth, and seventh houses. The judgment indicated that Allen would be a difficult patient, but that her disease was natural and could be cured with hot and moist remedies.⁴¹

Clients also consulted astrologers to locate lost or stolen property. Such consultations seem almost routine, as when a London apothecary went straight to an astrologer when his copy of Gerard's *Herball* was stolen from

³⁷ Keith Thomas, *Religion and the Decline of Magic* (New York: 1971), p. 307.

³⁸ A number of historians have studied the casebooks, including Barbara Howard Traister, *The Notorious Astrological Physician of London: Works and Days of Simon Forman* (Chicago: 2001); Kassell, *Medicine & Magic*. The casebooks of Forman and Napier are being published on the web at *The Casebooks Project* web site: <http://www.hps.cam.ac.uk/casebooks/>.

³⁹ Kassell, *Medicine & Magic*, p. 127.

⁴⁰ Kassell, *Medicine & Magic*, pp. 141–3.

⁴¹ Kassell, *Medicine & Magic*, p. 145.

his shop.⁴² In 1597, a client asked Forman if there might be treasure in a house formerly inhabited by Sir Frances Drake.⁴³ People also sought help from astrologers to find missing children, husbands lost at sea, and lovers missing in war. In 1632, the Valencian nobleman Diego de Vich recorded in his diary that the “distressed and weary” parents of a lost six-year-old girl went to an astrologer for help in finding their daughter. “The astrologer responded that they should look in the well,” Vich reported, “because the figure and hour of the interrogation pointed to this unfortunate water source, and thus the girl was found in the well.”⁴⁴ The anxiety over such lingering questions must have been intense. Even if the astrologer’s report was grim, perhaps the news itself gave some relief and brought closure to nagging doubts.

Anxious merchants and ship owners routinely sent for astrologers when a cargo ship was delayed. Astrologers chose appropriate days for beginning a voyage, gave assurance to anxious passengers making daunting overseas journeys, and answered questions about the risk of pirates. Astrologers counseled servant girls asking about future husbands, widows wondering whether or not to remarry, men asking how rich their proposed brides might be, or whether they were virgins, wives and husbands worried about a spouse’s faithfulness, fathers, wives, and husbands inquiring about the life expectancies of family members. Practically every conceivable kind of domestic problem, question, or entanglement was vetted in the astrologer’s consulting room.

Some clients came to astrologers to seek advice about their careers or other economic decisions. “Mr. Broughton,” one of Forman’s clients, repeatedly visited Forman in 1597 to ask about his chances of being appointed Dean of Chester Cathedral versus that of rivals for the position. Mr. Digby, another client, inquired about whether to rent a particular house and whether he had a chance to be appointed Master of the Robes. In 1597, Mr. Woodward consulted Forman “to know which way from his master is best for him to dwell to thrive.” Recently released from his apprenticeship, Woodward was ready to set up shop on his own. “Go east,” Forman advised, “Or southeast or flat west to the Strand.”⁴⁵

Merchants also used astrology. In an age of unparalleled mercantile opportunity and incalculable risk, businessmen sought every conceivable way of predicting market fluctuations. In Antwerp, the Nuremberg

⁴² Thomas, *Religion*, p. 307.

⁴³ Thomas, *Religion*, pp. 317–8.

⁴⁴ Lanuza, *Astrología*, p. 188.

⁴⁵ Traister, *Notorious Astrological Physician*, pp. 59–61 (spelling modernized).

astrologer Christopher Kurz claimed to have devised an astrological system by which he could foretell the prices of spices and other commodities. "Trade in spices needs great foresight," he wrote to the Antwerp merchant Lienhard Tucher. Kurz warned the merchant against consulting other astrologers: "For our astrologers aforetime have written much, but little with reason." Kurz preferred to find his own rules by experiment. After three years of searching, he claimed, he had discovered a system for foretelling the prices of pepper, ginger, and saffron. "I think God has given it to me," he told Tucher. The merchant was convinced. Tucher diligently followed Kurz's prognostications—although to what success we do not know.⁴⁶ In Venice, an astrologer named Bartolomeo Raines had similar relations with merchants who employed him to predict market fluctuations.⁴⁷

Astrologers' clients came from all walks of life. They were from privileged classes, from the trades and professions, and from the ranks of servants, seamen, peddlers, and paupers. Both men and women sought out astrologers for advice, although Forman's clients were mostly women. Many came seeking explanations for the misfortunes that had beset them: illness, miscarriages, sterility, bankruptcy, and political failure. Others sought to gain an advantage in business or politics. Or they wanted advice to help them make life decisions: whether and when to propose marriage, file a lawsuit, move house, or take a journey. Astrology refuted the notion that misfortune was purely random or coincidental. Nothing occurred purely by chance, the astrologers assured their clients: for everything there is a rhyme and reason.

The ubiquity of astrology in Renaissance Europe defies any attempt to make firm distinctions between high and low, between popular and elite cultures, or between learned and vulgar. Astrologers were all over the place: in the courts of princes and popes, in university lecture halls, and on the piazzas, serving men and women of every social station.

Almanacs and Prognostications: Astrology in Print

One did not actually have to visit an astrologer for a personal consultation to gain access to useful astrological information. The advent of printing

⁴⁶ Richard Ehrenberg, *Capital & Finance in the Age of the Renaissance: A Study of the Fuggers and their Connections*, trans. H.M. Lucas (New York: 1928), pp. 240–1.

⁴⁷ Guido Ruggiero, *Binding Passions: Tales of Magic, Marriage, and Power at the End of the Renaissance* (Oxford: 1993), p. 204.

made it possible for practically any literate person to learn the rudiments of astrology—or at any rate to obtain, even if second-hand, the advice of an astrologer. Many astrologers gained their first exposure to the public by printing an astrological prognostication—a pamphlet chock-full of predictions about short and long term events.

Such pamphlets were extremely popular in the 16th century. The prognostication mingled prophecies about the future of the Church and state with practical advice for farmers and merchants. They almost always took the form of short, unbound booklets, cheaply printed, both in Latin and the vernacular, and often decorated with woodcuts depicting a prophecy. Vernacular prognostications aimed at a broad public, and they came off the 16th century presses by the hundreds. With sweeping generalizations proclaimed in booming tones, the prognostications announced deliberately frightening predictions about global and local events. Although many educated readers dismissed prognostications as worthless nonsense, most ordinary readers took them seriously and read them with fascination.

The 16th century astrologer and polymath Girolamo Cardano got his start in print by publishing a prognostication in 1534.⁴⁸ His twenty-two-page booklet, in Italian and aimed at a popular audience, was typical of the Italian prognostications of the period: a hotchpotch of political, religious, and meteorological predictions, along with information on long-term historical trends, all based on his reading of the heavens. “I say in general that men must become worse than they are now, so far as the faith is concerned,” Cardano wrote gloomily. A planetary conjunction of 1564 signaled “the renovation of all the religions, the Christian and the Muslim.” Drought would strike in July and August 1536, while fog and storms would come the following summer. Why did Cardano, arguably the most erudite man of the times, stoop to write such a paltry work? He did it for the same reason other astrologers wrote prognostications: to make a little money. Similarly, the German physician Theophrastus von Hohenheim (1493–1541), later known as the radical medical reformer Paracelsus, also broke into print with a prognostication. Paracelsus’ *Practica gemacht auf Euopen* [Prediction for Europe], printed in 1529, was his first publication under the name of Paracelsus. The tract, containing the usual alarming predictions of political and civil unrest, launched Paracelsus’s successful

⁴⁸ Grafton, *Cardano’s Cosmos*, p. 38.

career as a pamphleteer and enabled him to establish a reputation as a prophet.⁴⁹

By far the commonest type of astrological publication—the one that consumed most of the astrologers' energies and met the highest demand—was the almanac. Ever since Johannes Gutenberg published the first printed almanac in 1448—eight years before the publication of the famous Gutenberg Bible—almanacs had become a prominent part of early modern popular literature. By the 1470s almanacs streamed from printing presses all over Europe, some appearing as broadsheets and others, more commonly, in booklet form. By the 16th century, almanacs had become a staple of the book market, and were available in every city and hamlet. By the 1660s in England—a period of particularly robust astrological publication—about 400,000 almanacs a year were sold, roughly one for every third family.⁵⁰ It has been estimated that during the heyday of astrological publication in England a minimum of three to four million almanacs were printed, a figure that Keith Thomas considered “a distinct under-estimate.”⁵¹ Almanacs were, arguably, the most popular books of the early modern period.

An almanac typically contained three elements: a calendar, including church festivals, feast days, markets, fairs, and sometimes even a selective chronology of world history or a list of kings; information about the years' astronomical events; and a series of astrological prognostications, including predictions about the weather, crops, health, and political and religious events. Some almanacs made room on blank pages for diaries and account books. Others included routes between towns, a zodiac man illustrating the effects of the planets on the human body, or entertaining games and tricks for leisure hours. Almanacs were all-purpose reference books that served multiple uses for ordinary readers.

It is easy to see why almanacs enjoyed such huge success in the popular book market. They were the simplest and most accessible expression of scientific principles that promised readers the capacity to predict the future in times of uncertainty. Moreover, almanacs were specific to

⁴⁹ Charles Webster, “Paracelsus: Medicine as Popular Protest,” in Ole Peter Grell and Andrew Cunningham, ed., *Medicine and the Reformation* (London: Routledge), pp. 57–78 and 60–1.

⁵⁰ Patrick Curry, *Prophecy and Power: Astrology in Early Modern England* (Princeton, N.J.: Princeton University Press, 1989), p. 21.

⁵¹ Thomas, *Religion*, p. 294.

particular geographical regions, issued to fit the varying astrological meridians of particular places. They also contained information and advice for a variety of different professions and ways of life. A surveyor might look to an almanac for information about land measurement, while a seaman might carry an almanac aboard ship for its nautical advice. Almanacs even catered to specific religious and political tastes, which is why times of political uncertainty tended to stimulate their production. Finally, they were cheap: in 16th century England, one could purchase an almanac for as little as a penny.⁵²

Thus there was a ready market for almanacs. They were a staple of the book trade throughout Europe and were available for sale in practically any bookstore. In France, almanacs became an important part of the literature of *colportage*, or peddler's literature. Along with tools and trinkets, peddlers carried in their packs volumes known as the *Bibliothèque bleue*: small, badly printed on coarse paper, and roughly bound in the same blue paper that was used to wrap sugarloaves.⁵³ The little booklets of fables, legends, tales of knightly valor, and, most of all, almanacs, sold at a phenomenal rate, and they continued to sell well into the modern period. In the mid-19th century, it has been estimated that some 9,000,000 per year were printed and sold.⁵⁴ Almanacs were for the poor, for those with little time to read, and for the modest classes who read little. They were, as historian Geneviève Bollème described them, "the books of people who hardly read."⁵⁵

In fact, one did not even need to read in order to tap the secrets of an almanac. One could still gaze at them and consult them for their pictures and astrological signs. The Elizabethan almanac maker who styled himself "J.A." wrote that he intended his almanac, *A Perfyte Pronostycacion Perpetuall* (c. 1555), specifically for "the ignorant people" and "them which knoweth not a letter on the book." The compiler met the needs of the unlettered by supplying illustrations of sickly cattle, sinking ships, corpses, and other catastrophes (Figure 5.4).⁵⁶ If a peasant or craftsman

⁵² Bernard Capp, *English Almanacs 1500–1800: Astrology and the Popular Press* (Ithaca, N.Y.: 1979), p. 41.

⁵³ On the *Bibliothèque bleue*, see Robert Mandrou, *La Culture populaire aux XVII^e et XVIII^e siècles: La Bibliothèque bleue de Troyes* (Paris: 1964).

⁵⁴ Eugen Weber, *Peasants into Frenchmen: The Modernization of Rural France, 1870–1914* (Stanford: 1976), p. 461.

⁵⁵ Geneviève Bollème, *Les almanachs populaires aux XVII^e et XVIII^e siècles: essai d'histoire sociale* (Paris: 1969), p. 16.

⁵⁶ Capp, *English Almanacs*, p. 31.



Figure 5.4: Pages from *A Perfyte Pronostycacion Perpetuall* by "J.A." (c. 1555) illustrating events that would occur in years "When Newe yeres daye falleth on the Tuesday," including windy winters, rainy summers, sickness of women, and "Syppes and Galleys shall perysshe"

owned only one book, it was likely to be an almanac. And if he didn't own one, a neighbor probably did, or, at the very least, the nearby barber or midwife had a well-thumbed copy at hand.

However, almanacs were not just pulp literature for the common people. Everyone, it seems, read almanacs. The *Shepherds' Calendars* (*Le Grand calendrier compost des bergers*), the archetype of the French almanac, were published continuously from the late 15th century down through the 16th and 17th centuries.⁵⁷ Each issue contained a mélange of folklore, astrological information, and forecasts; the *Shepherds' Calendars* circulated widely throughout France. A staple of the Bibliothèque bleue, the booklets were read not only by the people but also by the king of France, Francis I, who had a copy in the royal library.⁵⁸ Costing only three

⁵⁷ On this work, see Bollème, *Almanachs*, pp. 40–6.

⁵⁸ Natalie Zemon Davis, *Society and Culture in Early Modern France* (Stanford: 1975), p. 191.

sous, they were within reach of almost any merchant, laborer, or even peasant; but they were read by a broad cross-section of society.

Of course, just because one could afford a book does not mean that one wants or needs it. How useful would early modern readers find books such as the *Shepherd's Calendar*? Certainly they would have provided information that would supplement oral tradition, but it is difficult to know how essential such information was. Villagers had access to a wide range of information from local sources, such as midwives, apothecaries, and priests. At times, the information in almanacs seems so elementary as to be hardly new, or of much use, to a villager. Did the almanacs give people a sense that the future was knowable, or at least not subject entirely to the whim of chance? Were almanacs a source of entertainment? It is difficult to say. Yet, though it is impossible to know whether peasants read these works—or whether they were, in fact, even intended for peasants—we can be certain that almanacs were ubiquitous.

Purchasers of almanacs belonged to every social group. Most surviving copies originally belonged to members of the gentry or the professions. However, yeomen and middle-class readers probably bought the great majority of almanacs. The Elizabethan mason Captain Cox was reported in 1575 to possess a library that included the *Kalender of Shepherdes* (an English translation of the French *Calendrier des bergers*), various almanacs and prognostications, and astrological books by Jasper Laet and Nostradamus.⁵⁹ The English pamphleteer Thomas Nashe (1567–c. 1601) wrote, concerning the popularity of almanacs, “Not the poorest walking-mate or thread-bare cut-purse . . . can well be without them, be it but to know the Faïres and Markets.”⁶⁰

To appreciate the wide diffusion of almanacs in the 16th century, one may look at the records of books purchased at the Frankfurt book fair from the Frankfurt bookseller Michael Harder in the spring of 1569.⁶¹ Harder sold more than 5,900 books to book dealers all over Germany. He had customers in cities as far north as Braunschweig and as far south as Zurich, and in more than twenty cities and towns in between, including Nuremberg, Münster, Magdeberg, and Schwäbisch-Hall. Almanacs and other works on astrology make up a significant share of Harder's stock.

⁵⁹ Louis B. Wright, *Middle-Class Culture in Elizabethan England* (Chapel Hill: 1935), p. 84.

⁶⁰ Wright, *Middle-Class Culture*, p. 169.

⁶¹ Ernst Kelchner and Richard Wülcker, *Mess-Memorial des Frankfurter Buchhändlers Michael Harder. Fastenmesse 1569* (Frankfurt: 1873).

He listed purchases at the fair of 194 astrology books and 106 almanacs. Postmortem library inventories bring us even closer to the world of book ownership, and show that almanacs, prognostications, and astrological books were part of even the smallest libraries of merchants, craftsmen, and professionals.⁶² Considering that almanacs had a distinct life span and were not typically the kind of books one saved, their appearance in post-mortem inventories is significant.

Almanacs and prognostications were ephemeral literature. Printed on cheap paper and sold unbound, they were easily discarded and not much valued. In its most elementary form, an almanac might give merely the conjunctions and oppositions of the sun and moon, dates of eclipses and moveable feasts. Such sheets were "the poor man's practical astronomy;" many were, in effect, broadsides.⁶³ Countless copies must have simply disappeared through overuse or recycled as kindling, writing paper, lining for pie dishes, or even for wrapping small items. Almanacs were also used as diaries and daybooks, and many surviving copies contain handwritten memoranda, accounts, and farming notes.⁶⁴ Alternatively, as the 17th century English *Poor Robin* almanac helpfully noted, "When an Almanack is out of Date, the Leaves thereof will serve to make your Back-side bright, and are very useful about such privy matters."⁶⁵

Prognosticators, Almanac Makers, and Readers

Almanac makers came from a variety of professions and walks of life. Many were irregular medical practitioners, "empirics," or hack writers who wrote almanacs for a living. Thomas Bretnor (f. 1602–1622), for example, referred to himself in 1607 as a "Teacher of Mathematicks and Geometrie," and later expanded his title to "Teacher of Mathematics and Physitian," even though the London College of Physicians prosecuted him for illegal

⁶² Michael Hackenberg, *Private Book Ownership in Sixteenth-Century German Language Areas* (Ph.D. Diss., University of California, Berkeley, 1983).

⁶³ Victor E. Neuburg, *Popular Literature: A History and a Guide* (New York: 1977), p. 50.

⁶⁴ Capp, *English Almanacs*, p. 61. The young London barrister John Greene kept his diary for the years 1635–1657 on the blank pages of almanacs. E. M. Symonds, "The Diary of John Greene (1635–57)," *English Historical Review* 43 (1928), p. 386. Responding to the vogue of writing diaries on the blank pages of almanacs, some almanac makers began providing empty spaces in the middle of each calendar page, where a reader might make diary entries. Chapman, "Marking Time," p. 1282.

⁶⁵ Louise Hill Curth, *English Almanacs, Astrology, & Popular Medicine: 1550–1700* (Manchester: 2007), p. 80.

practice.⁶⁶ Yet, unlike some of the imposters who wrote almanacs, Bretnor was an accomplished mathematician. He was also a devoted Copernican, and never passed up the opportunity to voice his disapproval of Ptolemaic astronomy, which he contemptuously dismissed as “vulgar opinion.”⁶⁷ Almanacs and prognostications were almost as likely to appear under completely fictitious names—even the name of a deceased writer or a pseudonym designed to increase sales—as an author’s real name. Some claimed exotic origins: A popular English prognostication was ascribed to the “wandering Jew” Kinki Abenezrah, while a much-reprinted 16th century almanac bore the title *Erra Pater*, supposedly a “Jew born in Jewry.”⁶⁸

Selling almanacs was a lucrative business, “readier money than ale and cakes,” as the Elizabethan writer Thomas Nashe wrote in 1596. The genre even enticed leading mathematicians and doctors, who attempted to improve upon the pulp that was the basic stock in trade of the almanac-maker.⁶⁹ Richard Forster, the president of the Royal College of Physicians and a mathematician, wrote an almanac aimed specifically at physicians and surgeons. The self-taught London mathematician William Bourne composed a series of almanacs designed especially for navigators, who needed accurate information about celestial configurations. Like the majority of the compilers of nautical almanacs, Bourne was little interested in astrological prophecies. In fact, he was openly skeptical of astrological forecasting, preferring to provide the essential information that navigators might use to find their way on the open seas.⁷⁰ By the 17th century, however, authors such as Forster and Bourne were rapidly disappearing from the ranks of the almanac makers.

Clergymen also published almanacs. Georg Caesius, a Lutheran pastor in Ansbach, published one every year between 1570 and 1604. Caesius warned the people of Ansbach that they were sure to feel God’s wrath, “since sermons, warning, and godly admonishments do not help, God must visit us for our many sins with plagues, unnatural weather, hail, and violent storms.”⁷¹ Despite Luther’s opposition to astrology, Caesius defended the art, arguing that a knowledge of astrology was necessary for

⁶⁶ Curth, *English Almanacs*, p. 63.

⁶⁷ Francis R. Johnson, *Astronomical Thought in Renaissance England: A Study of the English Scientific Writings from 1500 to 1645* (Baltimore: 1937), pp. 251–3.

⁶⁸ Capp, *English Almanacs*, p. 31.

⁶⁹ Qu. Capp, *English Almanacs*, p. 44.

⁷⁰ On English nautical almanac makers, see Capp, *English Almanacs*, pp. 201–2.

⁷¹ *Prognosticon Astrologicum* (1575), quoted in C. Scott Dixon, *The Reformation and Rural Society: The Parishes of Brandenburg-Ansbach, 1528–1603* (Cambridge: 1996), p. 118.

a correct understanding of Scripture. Caesius's son, Georg Friedrich, also a pastor-astrologer, went further, writing in his annual prognostication for 1603, "any man of understanding can learn from the stars, which God has printed and put in the heavens like letters in a book, what great doings and signs of wrath he sends to threaten us sinful men."⁷² For the Lutheran almanac-makers, the heavens were windows on God's mind. The stars and planets are "preachers of penance," wrote one pastor, "heralds of God's wrath."⁷³

Almanacs contained more than just astronomical and astrological information. With its calendars, tide tables, phases of the moon, proverbs, lists of kings, advice on thrift, health hints, diagrams for phlebotomy, and charts showing the accumulated value of investments, the almanac was "the simple man's treasury of knowledge."⁷⁴ An almanac might be the first place where a reader encountered mathematics, and might be a stimulus for learning more. At any rate, teachers of the subject must have thought so, since they frequently advertised their services in almanacs and wrote almanacs themselves.

For many readers, an almanac might also have been one's first encounter with the new astronomy.⁷⁵ One of the earliest English references to Copernicus appeared in an almanac by John Field, a London mathematics teacher, whose *Ephemerides* of 1557 contained a preface by John Dee endorsing the Copernican system.⁷⁶ In an almanac for 1624, John Rudkin described "new discoveries in the celestial regions," including Galileo's sighting of the moons of Jupiter and his observations of the surface of the moon, Tycho Brahe's calculations on refraction, and Kepler's observations of sunspots.⁷⁷ Arthur Hopton's almanacs often included, in addition to the usual practical information, brief sections explaining the elements of astronomy. In his *Almanack and prognostication for this year 1607*, for example, Hopton added, by way of an epilogue, "A short Theorax [theoretical discussion] of the Moon, opening many secrets to enlighten vulgar

⁷² Barnes, *Prophecy*, pp. 151–2.

⁷³ C. Scott Dixon, "Popular Astrology and Lutheran Propaganda in Reformation Germany," *History* 84 (1999): 403–18, pp. 411–12.

⁷⁴ Weber, *Peasants Into Frenchmen*, p. 461.

⁷⁵ Norris Hetherington, "Almanacs and the Extent of Knowledge of the New Astronomy in Seventeenth-Century England," *Proceedings of the American Philosophical Society*, 119 (1975): 275–9. On 16th century English almanacs, see Carroll Camden, Jr., "Elizabethan Almanacs and Prognostications," *The Library*, 4th ser., 12 (1932): 83–108.

⁷⁶ Capp, *English Almanacs*, p. 191.

⁷⁷ John Rudston, *A new almanack and prognostication, for the yeare of our Lord God, 1624* (London: 1624).

admiration." In his excursus, Hopton explained in detail such abstract matters as the new cosmology's understanding of the source of the moon's light:

Concerning the light of the Moon, you must first understand, that she hath no light but what she receives of the Sun: as is manifested in her eclipse, where the earth being betwixt the Sun and Moon directly placed, shadows and breaks off the beam of the Sun, so that they cannot pass to the body of the Moon: by which means her light is taken away, and her body darkened, until such time that the Earth (by their motion) is put from betwixt the Sun & her, whereby it is apparent that the Moon is not translucent of herself, but a dark & solid body, having no light but what the Sun doth project unto her: for if she were shining of herself as a Diamond, she would retain light, not withstanding the want of the beams of the Sun.⁷⁸

By and large, almanacs rarely addressed the great cosmological debates of the day. A notable exception was the Englishman Thomas Digges's *Prognostication Everlasting* (London, 1576). In an appendix to the work, Digges provided a brief account of the Copernican system that played an important role in introducing the new astronomy to English readers.⁷⁹ Other almanac makers wrote about the new cosmological theories without endorsing them. In an almanac for the year 1606, Arthur Hopton discussed the theories of Copernicus and Tycho Brahe and his reasons for rejecting them in favor of the traditional Ptolemaic system, while Abraham Grammar, in almanacs published in the 1620s, made calculations based on Copernicus and Tycho without choosing between them.⁸⁰

The almanac makers' seeming indifference to cosmological matters is easy to explain. Almanacs were intended for practical use. The new Copernican cosmology did not seem to offer astrologers any advantages when it came to making astrological forecasts and nativities. As the English empiric John Partridge expressed it somewhat flippantly, it was "not a rush matter which your principles are, whether geocentric, heliocentric, or selenocentric."⁸¹ Even so, almanac-makers sometimes tried to enhance

⁷⁸ Arthur Hopton, *Almanack and prognostication for this year 1607* (London: 1627), spelling modernized.

⁷⁹ Francis R. Johnson and Sanford V. Larkey, "Thomas Digges, the Copernican System and the Idea of the Infinity of the Universe in 1576," *Huntington Library Bulletin* 5 (1934): 69–117.

⁸⁰ Capp, *English Almanacs*, p. 192; Johnson, *Astronomical Thought*, p. 250; Abraham Grammar, *A new almanacke, and prognostication for the yeare of our Lord God 1627* (London: 1627).

⁸¹ Quoted in Capp, *English Almanacs*, p. 192.

their tracts' appeal by calculating their prognostications according to the new astronomical system. Thus the Venetian astrologer Mario Vergieri calculated the prognostications in his almanac for 1581 "according to the new and more true Copernican motions."⁸² In reality, however, most readers probably had little interest in the cosmological debates of the day. As long as people could buy their almanacs and learn from them what the future might hold, what did they care whether it was Ptolemy's, Tycho's, or Copernicus's mathematics that astrologers employed in making them?

Although almanacs may not have played a decisive role in disseminating the new cosmology, they influenced popular culture in subtler and perhaps more permanent ways. Historians have noted, for example, that early modern almanacs were often printed for a specific city or region. Such "spatial pinpointing," along with the presence in almanacs of other local geographical information, heightened readers' awareness of place—in contrast to the drift of early modern Protestantism, which stressed that since God was everywhere, earthly time and place were irrelevant to the divine Heaven. The spatial referencing of almanacs, however, had nothing to do with sacred spaces such as altars and shrines; instead, it privileged secular spaces such as towns, cities, and coastlines. Astrology was premised on the notion that time and place mattered in a larger celestial sense, since astrological forecasting had necessarily to take into account the location from which the calculations were made.⁸³ Moreover, because astrology privileges the specific and local over the universal and global, it undermined the idea of universal history. The diversity of humans is not only an empirical fact: it is also a natural consequence of the diversity of celestial influences over human affairs.⁸⁴

Annotations in almanacs provide additional insights into how people read, used, and were influenced by almanacs.⁸⁵ Readers frequently used almanacs as diaries, and included annotations in the margins or daily entries recording events in their lives. For such readers, almanacs were

⁸² Mario Vergieri, *Predittione de gli effetti futuri dalla prima eclisse lunare dell' anno commune 1581. Calcolata secondo i nuovi, & piu veri moti Copernici nel meridiano della invitta città di Venegia, con molti futuri accidenti dalla cometa ultimamente apparsa* (Venezia: 1581).

⁸³ Alison A. Chapman, "Marking Time: Astrology, Almanacs, and English Protestantism," *Renaissance Quarterly* 60 (2007): 1257–90.

⁸⁴ Kryzysztotf Pomian, "Astrology as a Naturalistic Theology of History," in Zambelli, ed., *'Astrologi hallucinati'*, 29–43, p. 35.

⁸⁵ Adam Smyth, *Autobiography in Early Modern England* (Cambridge: Cambridge University Press, 2010), pp. 15–56.

not only instruments to divine the future, but also were tools for organizing the past in the form of autobiography.⁸⁶ In recognition of this practice, some almanac makers included blank columns in their almanacs or interleaved blank pages specifically for such autobiographical entries. Even though arguments about destiny versus God's power continued to vex early modern people, readers of almanacs were not so much interested in using occult powers as attempting to understand God's providence. Most readers understood that astrology had its limitations. The stars predict matters that God put under their influence, but God's eternal plan for the universe placed it outside the sovereignty of the heavens.

Astrology in the Countryside

The most common forms of environmental prediction by astrological means concerned the weather. Early modern societies were overwhelmingly rural and agricultural; hence weather conditions directly affected the economic and social conditions of the population. Drought, floods, and extreme cold could easily determine whether a family would survive or starve. To find out what to anticipate, most people turned to almanacs, which offered readers simple weather forecasts for the year. Usually divided into the four seasons, weather predictions tended to be general and often vague, for example, "rainy spring," or "windy winter." Although astrology provided an imperfect meteorological guide and often drew scorn and criticism, the public demanded weather forecasts, and no almanac writer could risk omitting them.

Most almanacs also contained astrological information concerning farming, such as the best time to plough, plant, geld animals, harvest, and fell timber. Land should be manured during the wane of the moon, said an Elizabethan astrologer, since during its increase the manure would merely stimulate the growth of weeds. A 1640 almanac noted, "many country people use to take observation of the Prime in covering and weaning of cattle."⁸⁷ Almanacs also provided guidance for farmers concerning veterinary medicine. The medical advice that almanacs provided for treating animals was almost identical to that found in the conventional medical books of the

⁸⁶ Smyth, *Autobiography*, p. 16.

⁸⁷ Capp, *English Almanacs*, p. 63.

day—ultimately based on the reigning humoral theory.⁸⁸ Readers of John Swan's almanac were advised to rub sick horses with "arrsmart" or water pepper—a broad-leaved herb that, being under the dominion of Mars, had cooling and drying properties—and then to lay "a good handful or two" of the herb under its saddle.⁸⁹ Another soothing remedy consisted of bathing a sick animal in ale infused with bay leaves, followed by a rub-down with oil and wine. Almanacs also included weather forecasts that had particular significance for animal health.

Just how deeply into peasant culture did printed almanacs and calendars penetrate? It is a fair question to ask, given the low rates of literacy in the countryside. Historian Natalie Zemon Davis questions whether works such as the *Calendrier des bergers* could have provided peasants with any useful information, and wonders "whether compilers and publishers envisaged a peasant public for them." Davis suggests that works such as the *Shepherd's Calendar* presented an idealized, sentimental vision of the peasant world for country gentlemen and city people and a way for such readers to identify themselves with the simple wisdom of country folk. Besides, peasants had their own ways of calculating the astronomical data they needed, including simple astronomical charts that they recorded in little wooden tablets. As for the almanacs' gynecological sections, Davis writes, the information presented was "trifling compared to the lore of the village midwife." Davis concludes that the almanacs "could hardly have brought [country people] much new information or changed significantly their reliance on oral transmission and their relationship with non-peasant groups."⁹⁰ Such observations caution us against making quick judgments based on the supposed public for popular astrology.

Astrology in the Piazza

For many astrologers, the "consulting room" was the piazza itself. Rubbing elbows with the *ciarlatani* in the town squares were prophets dressed in sackcloth declaiming their tales of catastrophic and prodigious happenings. Interpreting the meanings of natural and celestial events, they

⁸⁸ Andrew Wear, "Making Sense of Health and the Environment in Early Modern England," in A. Wear, ed. *Medicine in Society* (Cambridge: 1992), pp. 119–48, 144.

⁸⁹ Swan, *An Ephemeris* (Cambridge: 1657), quoted in Curth, *English Almanacs*, p. 219.

⁹⁰ Davis, *Society and Culture*, pp. 197–9.

foretold of death, famine, and war, and urged the populace to repentance.⁹¹ Both anomalous prodigies and normal astrological events were objects of fascination, packed with hidden meanings that popular prophets and almanac-makers promised to divulge.

"Respectable" astrologers and social commentators denounced the street-corner prognosticators. The redoubtable Tomaso Garzoni derided the almanac-makers, branding them as "eccentric madmen, made fun of by the vulgar and scorned by all the world's learned sages."⁹² Girolamo Cardano, himself an astrologer who had gotten his start by publishing a prognostication for a popular audience, railed against the "common" astrologers and tried to distinguish his prognostications from the ones that the "crazy diviners" sold in the piazzas.⁹³ Indeed, it seemed to many learned astrologers that common diviners had overrun the piazzas. The Italian humanist Giovanni Pontano railed against "the vulgar spectacle of third-rate necromancers that one hears ad nauseam in Rome, Bologna, and Florence."⁹⁴

There was a vigorous trade in astrology in the cities and towns of early modern Europe. Rigorous education was hardly a prerequisite for becoming an astrologer. A witness at the trial of the notorious Roman astrologer Orazio Morandi, when asked if he knew of anyone in Rome who practiced astrology, responded, "All Rome is filled with these charlatans; and I am amazed that the pope has not given sufficient provision against these imposters. Among them is a knife-seller whose name I don't know, a certain Battelli, certain Spaniards who go around selling their opinions about nativities, as I have heard."⁹⁵

They were of all sorts: charlatans, almanac-makers, diviners, balladeers, even priests. In 16th century Venice, a friar by the name of Aurelio di Siena became widely known as the "fortune-telling friar" (*"il frate della ventura"*) for his ability to foretell the future. Fra Aurelio practiced astrology, chiromancy, and geomancy to give clients advice about love and marriage, finding lost objects, and helping merchants realize

⁹¹ Elide Casali, *Le Spie del cielo: Oroscopi, lunari e almanacchi nell'Italia moderna* (Torino: 2003), pp. 203–27; Niccoli, *Prophecy and the People*.

⁹² Tomaso Garzoni, *La piazza universale di tutte le professioni del mondo*, ed. Paolo Cherchi (Turin: 1996), p. 224.

⁹³ Grafton, *Cardano's Cosmos*, p. 41.

⁹⁴ Casali, *Spie*, p. 206.

⁹⁵ Brendan Dooley, *Morandi's Last Prophecy and the End of Renaissance Politics* (Princeton: 2002), p. 125.

profits.⁹⁶ Aurelio's mixed bag of prognosticating tricks was hardly unique. By this time, printed prognostications included everything from prophecy and astrology to comet lore and politics. Prophets in the piazza were as likely to sell an almanac and cast a horoscope as to read celestial signs and portents to predict calamities to come.⁹⁷ Practicing divinatory arts was dangerous, however, even in republican Venice: in 1579, Fra Aurelio was jailed and interrogated by the Inquisition while his case dragged on, unresolved. He probably died in prison.

Most of the marketplace stargazers came and went without leaving a trace. Like other charlatans, they were itinerants who drifted from city to city peddling their prognostications to a curious public.⁹⁸ A few, however, gained not only local notoriety, but also widespread fame. One such prophet was Giuseppe Rosaccio (1530–1620), early modern Italy's most famous diviner.⁹⁹ Noted for his thick flowing beard, resplendent gown, and charismatic personality, Rosaccio had his prognostications licensed for sale in the public squares in cities throughout Italy. He had an "open house" on the Grand Ducal piazza in Florence and was a frequent visitor on the Piazza San Marco in Venice. When the priors of the Medical College in Bologna denied him permission to show himself on the central square, Rosaccio petitioned the papal legate, Cardinal Benedetto Giustiniani, who readily overturned the college's decision. Unsurprisingly, Rosaccio drew the ire of "legitimate" astrologers such as Giovanni Antonio Roffeni, a professor at the University of Bologna and a prolific author of almanacs and prognostications, for presuming to usurp the "most noble science" of astrology. Roffeni rightly regarded Rosaccio and his ilk as dangerous competitors.

Roffeni's condemnation of the street-corner prognosticators did little to damage Rosaccio's reputation. In fact, with his *Defense* against Roffeni's slander and his vast output of tracts on astrology and cosmology, Rosaccio managed to elevate himself to a virtual brand name. One follower, who dubbed himself Domenico Rosaccio, declared himself the son of the great prognosticator. Another popular astrologer called himself Tolomeo Rosaccio, thus appropriating the names of the two famous ancient and

⁹⁶ Guido Ruggiero, *Binding Passions. Tales of Magic, Marriage, and Power at the End of the Renaissance* (Oxford: 1993), pp. 175–222.

⁹⁷ Niccoli, *Prophecy*, pp. 134–5 and 140–67.

⁹⁸ For a look at the *ciarlatani* in early modern Italy, see William Eamon, *Science and the Secrets of Nature: Books of Secrets in Medieval and Early Modern Culture* (Princeton: 1994), ch. 7.

⁹⁹ Casali, *Spie*, pp. 211–16.

modern astrologers. Rosaccio's own works continued to be reprinted down through the 18th century; and in 1676, the poet Paolo Minucci painted an unforgettable portrait of "the great mathematician and astrologer" in his annotations of the Florentine painter Lorenzo Lippi's mock heroic poem *Il Malmantile riacquistato*. Minucci identified the astrologer-soldier of the poem with a nephew of Rosaccio. Minucci's charlatan did not mount a portable stage but operated on horseback next to an elevated platform that displayed his parchment license, "a skeleton of a cat or dog, a brass sphere, and three long black horns, from one of which hung a piece of magnet, from another a ball of the clearest crystal, and the third he said was unicorn." This "proudest chatterer that has even been seen in the world of charlatanry" was obviously a composite of several charlatans—chief among which was the great prognosticator Giuseppe Rosaccio.¹⁰⁰

It is not entirely clear how seriously the urban population took the science of astrology. While some astrological prophecies caused great alarm, others passed by with little notice. The dire prognostications of the deluge of 1524 caused panic in Rome and elsewhere, but in Venice the forecasts were the subject of Carnival derision. As the 16th century drew to a close, urban people grew increasingly skeptical of astrology. Just as the *ciarlatani* lampooned the doctors in street comedies, ballad singers satirized the astrologers in Carnival songs such as one by "Doctor Master Pegasus Neptune" that predicted "conjunctions of cheese and lasagna" that would cause "a deluge of poultry in the soup cauldrons, . . . and a flood every morning of Greek, Dalmation, and Latin wine," followed by "horrendous winds shot off like bombards sending off stupendous stench." ¹⁰¹ In the piazzas and marketplaces, amid the revelry of Carnival (when people of all social levels rubbed elbows), the object of public terror was transformed into an object of laughter, and the stars and planetary conjunctions were brought down to the level of bodily functions.

Nevertheless, the fear was real, and calming public fear was a matter of grave concern to civic authorities. Fear of public disorder during predictions of dire events, such as the deluge of 1524, may explain why the Bolognese astrologer Giacomo Pietramellara published one prediction for the learned in a Latin prognostication promising terrible calamities, and

¹⁰⁰ Casali, *Spie*, p. 216. Translation from David Gentilcore, *Medical Charlatanism in Early Modern Italy* (Cambridge: 2006), pp. 27–8.

¹⁰¹ *Prognostico: over diluvio consolatorio composto per lo eximio Dottore Maestro Pegaso Neptunio: el qual dichiara de giorno in giorno que che sarà nel mese de febraro; Cosa bellissima & molto da ridere* (n.p., n.d., [Venice? 1524]), quoted in Niccoli, *Prophecy*, p. 158.

another, more optimistic one, in the vernacular, for popular readers. Fear itself was to be feared. Historian Ottavia Niccoli explains: "When astrological debate descended to the city streets it became a complex system of opposing and contradictory forces involving fear, ritual, and mockery. These forces had to be channeled."¹⁰² In some cities, such as Modena, the prognosticators divided into "opposing camps of deluge and Carnival." On one side were the astrologers predicting terrible events to come; from the other camp, howls of laughter and derision could be heard, as charlatans and popular ballad singers regaled the people with songs like one recorded by a local observer, in which the ballad singer transformed the astrologer's instruments into pots and pans and other kitchen utensils:

Those astrolabes of yours are frying pans, your spheres are juggling balls, the quadrant is a pot, a jar; your tables are [dining] tables set, where you put good things to eat. . . . You are part prophet and part diviner when you have drunk well of wine. Go with your almanac into the kitchens, to the stoves in the back alley, where there is always a flood of grease and fat.¹⁰³

The failure of the flood predictions and their comic inversions in popular culture may have had a damaging effect on the public figure of the astrologer. "In the culture of the mass of urban folk," writes Niccoli, "the astrological arts were reduced to the level of a juggler's bag of tricks, and astrological science is denied, derided, and made to seem ineffectual."¹⁰⁴ Yet the ridicule of astrologers in Carnival songs and charlatans' performances did not imply a rejection of prophecy. Popular divination used other, more traditional means to foretell the future. The urban populations were aware of astrology, but gave it little credit.

In 1578, a Spanish writer called Cosme de Aldana published a book in Italian on the errors of the common people—a popular genre of the day. In his treatise, Aldana criticized the common people for deriding the astrologers and refusing to believe in their prophecies, while maintaining their own superstitious divinatory methods, by which, for example, "because a dog barks in a certain way . . . you say, if anyone is sick in the neighborhood, he will die." Such forms of popular divination, Aldana remarked, survived particularly among "certain ignorant and silly old enchantresses and charm purveyors," the sort of women who went about "throwing flour on a polished table on St. John's Eve to forecast the husband their daughter

¹⁰² Niccoli, *Prophecy*, p. 160.

¹⁰³ Niccoli, *Prophecy*, p. 165.

¹⁰⁴ Niccoli, *Prophecy*, p. 167 (translation slight altered).

would have.”¹⁰⁵ The stark contrast between learned astrology and popular divination that Aldana observed was a symptom of a broader phenomenon, which historian Peter Burke has described as a wholesale withdrawal of the elites from popular culture. “In 1500,” writes Burke, “popular culture was everyone’s culture; a second culture for the educated, and the only culture for everyone else. By 1800, however, . . . the clergy, the nobility, the merchants, the professional men—and their wives—had abandoned popular culture to the lower classes, from whom they were now separated, as never before, by profound differences in world view.”¹⁰⁶

Astrology and Prophecy

Renaissance people expectantly awaited the Last Judgment. Messianic prophecies were highly influential in the Middle Ages—particularly with minority and marginalized groups that regarded the prospect of heavenly bliss as just compensation for their earthly afflictions—and continued to hold sway into the early modern era. Periodically, waves of millennial expectancy swept Europe. The idea that people must prepare the way for the coming of Antichrist and the reign of God on earth was familiar to all Christians.¹⁰⁷

Chiliasm—the expectation of an imminent, supernaturally caused transformation of the world—was not limited to religious fanatics and social revolutionaries; it was widespread and constant in the Middle Ages. Indeed, some historians have argued that medieval apocalyptic thought was predominantly conservative, and that the revolutionary use of apocalyptic ideas was the exception.¹⁰⁸ According to historian Robert Lerner, millenarianism was a part of the mental “deep structure” of European thinking. It lasted for centuries because it brought consolation not just in times of social dislocation, but in everyday life: “Present disasters might be tolerated better if they could be viewed in terms of a coherent divine

¹⁰⁵ Cosme de Aldana, *Discorso contro il volgo in cui con buone ragioni si reprovano molte sue false opinioni* (Florence, 1578), quoted in Niccoli, *Prophecy*, pp. 193–4.

¹⁰⁶ Peter Burke, *Popular Culture in Early Modern Europe* (New York: 1978), pp. 366–7.

¹⁰⁷ For a survey of such movements, see Norman Cohn, *The Pursuit of the Millennium: Revolutionary Millenarians and Mystical Anarchists of the Middle Ages* (London and New York: 1970). Cohn’s argument—that millenarianism occurred only among radical groups as a response to extreme social dislocation—has been shown by recent studies to be fundamentally flawed.

¹⁰⁸ Bernard McGinn, *Visions of the End: Apocalyptic Traditions in the Middle Ages*, 2nd ed. (New York: 1998).

plan."¹⁰⁹ When disaster struck, new forecasts were brought forth out of the long tradition of old prophecies and retailored to suit a new age.

The early modern period was an apocalyptic age. Contemporaries felt as if they were living in the Last Days.¹¹⁰ The Black Death, famine, and other natural disasters, and the general political instability of the 14th and 15th centuries, created a climate in which optimistic hopes for the future mingled with fear and dread. The sense of historical crisis spawned innumerable prophecies about the world's end. By the time of the Great Schism, apocalyptic ideas were rife in Western Europe. The Reformation heightened society's anticipation of the end of days. By making Scripture more generally accessible to readers, the reformers riveted the attention of believers on prophetic passages in the books of Daniel and Revelation, which they searched with ever-greater care for insights into the relationship between the present and the future.¹¹¹

Astrology intensified millennial expectations. Signs in the heavens gave astrologers and theologians clues that the Kingdom of God was at hand. One of the most prominent crises of an age filled with troubles was the Great Schism (1378–1414), when the papacy was divided between opposing "obediences." First two, then three rival popes claimed to lead the Church. The schism stirred up countless apocalyptic visions and prophecies. To many, the division of Christendom was a preamble to the advent of Antichrist.

Not everyone concurred. Initially Pierre d'Ailly (1350–1420), who was chancellor of the University of Paris from 1389 to 1395 and later a cardinal, agreed with those who saw the Schism as a sign of the approaching end of the world. But as the fissure widened, d'Ailly rejected the apocalyptic interpretation of the Schism, which, he reasoned, did little to heal the rupture. D'Ailly turned to astrology for further insights. After long study of the astrological writings of Roger Bacon, he discarded his previous views and came to the conclusion that the return of the Antichrist would occur in the year 1789, "if the world shall last that long." Armed with astrological reasoning that postponed the apocalypse into the distant future, d'Ailly

¹⁰⁹ Robert E. Lerner, "The Black Death and Western European Eschatological Mentalities," *American Historical Review* 86 (1981): 533–52, p. 551.

¹¹⁰ Andrew Cunningham and Ole Peter Grell, *The Four Horsemen of the Apocalypse: Religion, War, Famine, and Death in Reformation Europe* (Cambridge: Cambridge University Press, 2000).

¹¹¹ Barnes, *Prophecy*, pp. 39–41.

refuted the false prophets and urged authorities to take measures to heal the Schism.¹¹²

While for d'Ailly astrology performed a sober, calming role, tempering the exuberant predictions of the apocalypse from the stars, others saw in the stars dire prophecies for Christendom. Despite the denunciations of astrology by Protestant reformers, including both Luther and Calvin, the 16th century was a veritable golden age of astrological prophecy. Indeed, Lutheran Germany was one of the hot spots of prophetic astrology.

Johann Lichtenberger (d. 1503) was one of Renaissance Germany's most prominent stargazers. Lichtenberger's prophecies, originally published in Latin in the 1470s and 1480s, were reissued continuously in German and Latin down through the 16th century.¹¹³ At one point in his career, Lichtenberger was (or at least he called himself) "court astrologer of Emperor Frederick III"—or better, "Imperial Astrologer" (*astrorium iudex sacri imperii*). Lichtenberger's main work, *Prognosticatio* (1488)—one of ten astrological publications by him that survive—was within a decade of its initial publication reissued in at least fourteen Latin, German, and Italian editions. By 1600, some 60 editions of the work had been published. Even Luther couldn't stem the tide: despite giving astrology a cold shoulder, he published a German edition of Lichtenberger's prophecies in 1527, adding a preface spelling out his own position on the art.¹¹⁴ Luther denounced Lichtenberger as a false prophet filled with a "fanatical spirit" and intent on fostering confusion among rulers with his vague hints of future happenings. Lichtenberger was most remembered for having predicted the German Peasants' War of 1524–1525. However, it can hardly be said that Lichtenberger—or, for that matter, any other astrologer—had a direct influence on the rebellion, since only after the country had been rocked by the war did people discover that he had foretold the disastrous event.

In the second half of the 16th century, astrologers everywhere were pointing to signs in the skies that indicated deterioration, change, and chaos so pronounced that it could only culminate in the end of the worlds. Tensions increased when, in 1572, a new star appeared in the heavens—the first new star since the star of Bethlehem that announced the birth of

¹¹² Laura Smoller, "Apocalyptic Calculators of the Later Middle Ages," in *Knowing the Time, Knowing of a Time*. 3rd Annual Conference of the Center for Millennial Studies, Boston, December 6–8, 1998, Conference Proceedings (<http://www.mille.org/publications/Confprog8/SMOLLER.PDF>), pp. 4–5. In addition, see Smoller, *History*, pp. 105–6.

¹¹³ On Lichtenberger, see Kurze, "Prophecy."

¹¹⁴ Barnes, *Prophecy*, p. 146.

Christ. A few years later, in 1577, a comet blazed through the night sky, carrying all sorts of eschatological messages.

The Fiery Trigon Conjunction

Soon astrologers were warning of another, far more ominous threat looming on the horizon. In 1583, a rare conjunction of the superior planets Saturn and Jupiter would occur. The reason why this conjunction was so menacing is that it was to happen at the end of the “watery trigon” (comprised of the signs linked to water, Pisces, Cancer, and Scorpio), and at the beginning of the “fiery trigon,” the triplicity defined by the fiery signs of Aries, Leo, and Sagittarius. Astrologers knew that the changes brought about by conjunctions were magnified as planets entered a new trigon. Thus, a “great conjunction” occurred every twenty years, when the superior planets Saturn and Jupiter entered a specific trigon. “Greater conjunctions” were much rarer and more significant events, occurring once every 240 years, when Jupiter and Saturn entered a completely new trigon. The rarest conjunction of all—the “greatest conjunction”—happened only about once every thousand years, when Jupiter and Saturn entered the fiery trigon in the sign of Aries. Astrologers agreed that only six “greatest conjunctions” had ever occurred in the history of the world, one being at the birth of Christ. So exceptional was the fiery trigon conjunction that many astrologers connected it with an old prophecy for the year 1588 predicting major upheavals and the end of the world.

The European fascination with the Wonder Year of 1588 can be traced back to the supposed discovery among the papers of the German astronomer Regiomontanus (Johannes Müller) of a doggerel predicting great calamities for that year, which he was alleged to have scribbled on a leaf of paper. Regiomontanus, one of Europe’s most respected mathematicians, was widely known in intellectual circles for his inaugural lecture at University of Padua, in which he praised astrology as queen of sciences. Thus any prediction attributed to him gained credibility.¹¹⁵ Because the prediction was in verse, it soon assumed the status of a prophecy. The prophecy, in English translation, foretold:

¹¹⁵ H. Darrel Rutkin, “Astrology,” in *Cambridge History of Science*, vol. 3: *Early Modern Science*, ed. Katharine Park and Lorraine Daston (Cambridge: 2006), p. 545.

When from the Virgin Birth a thousand years
 With full five hundred be complete and told,
 The Eighty-Eighth a famous year appears,
 Which brings distress more fatal than of old.
 If not in this year all the wicked world
 Do fall, and land with sea to nothing come;
 Yet Empires must be topsy-turvy hurled
 And extreme grief shall be the common sum.¹¹⁶

Regiomontanus's prediction was probably a fabrication, though this hardly seems to have mattered at the time. Kaspar Brusch (1518–1599), a German humanist, published it for the first time in 1553, claiming that he found it among the astronomer's papers. The prophecy was quickly endorsed by leading astrologers, including the Bohemian astronomer Cyprian Leowitz (1524–1574), whose works were widely regarded as authoritative, not only by polemicists but also by astronomers such as Tycho Brahe—although Brahe also opined that Leowitz should have spent more time on astronomy than astrology.¹¹⁷ In his *De coniunctionibus magnis insignioribus superiorum planetarum* (1564), which Leowitz wrote at the request of the future emperor Maximilian II, the astronomer offered his interpretation of the conjunction's significance: "Since . . . a new trigon, which is the fiery, is now imminent, undoubtedly new worlds will follow, which will be inaugurated by sudden and violent changes, for this has happened before when one trigon ended and another began, but especially if the watery trigon is being followed by the fiery." Leowitz predicts that Maximilian II will be the first Hapsburg ruler under whom a fiery trigon begins, a sign that the new emperor will become another Charlemagne (Maximilian, who died in 1576, did not live to see the fiery trigon). Leowitz went on to proclaim that the conjunction "undoubtedly announces the second coming of the son of God and man in the majesty of his glory."¹¹⁸

The predicted fiery trigon conjunction spawned a huge body of prophetic literature. People remembered the prophecies it generated long after the conjunction had come and gone. Everything about the momentous changes in the heavens combined to convince the English astrologer Richard Harvey that "either a final dissolution, or a wonderful horrible alteration of the world" would take place in the year 1588. Elaborating in

¹¹⁶ Quoted in Dixon, "Popular Astrology," p. 404 (spelling modernized). In addition, see Thorndike, *HMES*, 5: 373–4.

¹¹⁷ On Leowitz, see Thorndike, *HMES*, 6: 111–18.

¹¹⁸ Margaret Aston, "The Fiery Trigon Conjunction: An Elizabethan Astrological Prediction," *Isis* 61 (1970): 159–87 and 165–6.

his *Astrological Discourse upon the great and notable Coniunction of the two superiour Planets, SATURNE & JUPITER* (1583), Harvey detailed the disasters that would befall: "many fierce and boisterous winds," extraordinary floods, cold weather, unusual troubles, sorrow, envy, hatred, contention, strife, extreme poverty, famine, ruin to many great men, dearth, shipwrecks, and other "watery and fiery calamities"—all to be crowned by the final dissolution of the world and the Second Coming.¹¹⁹

Other astrologers chimed in, warning believers that the end of history was near. Robert Tanner, in his *Prognosticall iudgement of the great coniunction of the two superiour Planets, Saturne and Mercurie* (1583), agreed that the conjunction marked the end of time. "I will not take upon me to tell the very hour, day, and year, which is known to God alone," he averred; yet he was certain that the conjunction indicated the end of days. "Therefore watch and be mindful of the Lord's coming." The message the prognostications announced was clear, unmistakable, and always the same: The end is nigh; repent and do penance; turn to God while there was still time.

As in 1524, the *annus mirabilis* came and went without calamitous results. Astrologers, who had gone out on a limb predicting the world's end, became the butt of ridicule. Philip Stubbes, in his *Anatomy of Abuses* (1583) chided the "foolish star tooters," whose "presumptuous audacity and rash boldness . . . brought the world into a wonderful perplexity . . ., expecting a wonderful alteration of states and kingdoms . . . or else a final consummation and overthrow of all things." Henry Howard, Earl of Northampton, wrote that astrologers should be shunned "like a dragon's den."¹²⁰

Prophecies of doom traveled well in the 16th century, traversing both geographical borders and social class lines. In 1595, the London printer Abel Jeffes gathered a bunch of them in a pamphlet titled *A Most Strange and Wonderfull Prophetie upon this Troublesome World*.¹²¹ The work, attributed to German astrologers Dr. John Cypriano and Tarquatus Vandermas, announced that the year 1596 would bring the end of the world. "Dr. John Cypriano" was in fact Cipriano Leowitz, the Bohemian astronomer whose tract on the fiery trigon conjunction had caused such a stir. "Tarquatus Vandermas" was Antonio Arquato (Tarquatus in Latin), a Ferrarese physician and author of one of the most famous prognostications of the 15th

¹¹⁹ Aston, "Fiery Trigon Conjunction," pp. 167–8.

¹²⁰ Aston, "Fiery Trigon Conjunction," pp. 171–2.

¹²¹ On this work, see Jennifer Forster, "Anticipating the Apocalypse: An Elizabethan Prophecy," *The Historian* 63 (2001): 601–17.

century. Arquato's *Prognosticon de eversione Europae* (Prognostication of the Overthrow of Europe), dedicated to the King of Hungary Matthias Corvinus, appeared in 1480—a year full of alarm made memorable by the occupation of Otranto by marauding Turks, who ransacked the city and massacred much of its population after offering them a choice of conversion or death, and by the first siege of Rhodes. The sensational, doom-filled treatise predicted some of the most earth-shattering events of the 16th century, including the Lutheran reform, the Sack of Rome, and the Spanish conquests.¹²²

To these tracts, the author of *Strange and Wonderfull Prophetie* added excerpts from a widely read 1521 prognostication by the German astrologer Johann Carion.¹²³ Weighing in on the conjunction of 1524 in his *Prognosticatio und Erklerung der grossen Wesserung*, Carion set a specific time and date for the impending deluge: four o'clock in the afternoon on July 15, 1525. According to a legend, the elector with his wife took refuge on a mountain that day. When the appointed time arrived without any sign of the flood, the elector ordered his coach to return to his castle, where the four horses and a coachman were struck by lightning as they entered the gate.¹²⁴ Out of such texts and legends, the author of the *Strange and Wonderfull Prophetie* cobbled a mishmash of heavenly portents, including comets, planetary conjunctions, and massive social upheaval—all meant to “move us to a penitent life that God may withhold his grievous scourge from us.” That the dense, learned works of prominent German astrologers should have been translated and condensed into an English pamphlet of a dozen pages is indeed something strange and wonderful.

Astrology, Politics, and Social Change

In the spring of 1599, an Italian Dominican friar by the name of Tommaso Campanella (1568–1639), under the banner of natural magic and biblical prophecy, led a wretched band of libertine Dominicans, declassed noblemen, refugees, heretics, and bandits in a fantastic plot to overthrow the Spanish government in Calabria, and to establish a theocratic commune

¹²² Arquato's treatise has been published by Eugenio Garin, “L'attesa dell'età nuova e la 'renovatio',” in *L'età nuova. Ricerche di storia della cultura dal XII al XVI secolo* (Naples: 1969), pp. 105–11. In addition, see Thorndike, *HMES*, 4: 467–70.

¹²³ Carion (1499–1537), who served as court astrologer to the elector of Brandenburg, is best known for his *Chronicle*, a work on world history.

¹²⁴ Thorndike, *HMES*, 5: 202.

of which he himself would be head.¹²⁵ The revolt was a complete failure. Betrayed by co-conspirators, Campanella was arrested and charged with heresy and insurrection. Despite unbelievable torture, he refused to confess to having had any part in the uprising and escaped the death penalty only by feigning madness. He spent the next twenty-seven years in the jails of Naples, where, despite long periods of barbaric confinement, he composed the bulk of his voluminous *oeuvres* of scientific, religious, and political writings. Among his prison writings was his utopian classic, *La Città del sole*. Far from being utopian in the usual sense of an abstract idealization, *The City of the Sun* was in fact a blueprint for the ideal state he hoped to establish in Calabria, and then see expanded to the rest of the Christian world.¹²⁶

Astrology vindicated Campanella's millennial rebellion, justifying it as God's will revealed in the stars.¹²⁷ To the Calabrian friar, astrology was a divine science that promised deep insights into God's creation. The appearance of celestial novae, the progression of the sun toward the earth, recent earthquakes, floods, outbreaks of plague, and widespread political unrest were to Fra Tommaso signs of the impending end of the world. The general decline of Christendom and the spread of the Protestant heresy indicated that the time of Antichrist had arrived, further evidence of the approaching transformation.¹²⁸ The year 1600 was itself portentous, thought Campanella, as theologians, prophets, and astrologers alike confirmed.¹²⁹ All of these apocalyptic portents signified an imminent

¹²⁵ The documents relating to the Calabrian conspiracy were collected and published by Luigi Amabile, *Fra Tommaso Campanella, la sua congiura, i suoi processi e la sua pazzia*, 3 vols. (Naples: 1882); hereafter cited as *Congiura*. Volume 1 of Amabile's work contains a detailed narrative of the revolt. Luigi Firpo published selected documents in *Il supplizio di Tommaso Campanella* (Rome: 1985). For a summary of the revolt, see Frances A. Yates, *Giordano Bruno and the Hermetic Tradition* (Chicago: 1964), pp. 364–66. In addition, see Germana Ernst, *Tommaso Campanella. The Book and the Body of Nature*, trans. David L. Marshall (Dordrecht: 2010), pp. 67–84.

¹²⁶ Amabile, *Congiura*, 1: 220–25; Joan Kelly-Gadol, "Tommaso Campanella: The Agony of Political Theory in the Counter-Reformation," in *Philosophy and Humanism: Renaissance Essays in Honor of Paul Oskar Kristeller*, ed. M.P. Mahoney (Leiden: 1976), pp. 164–89.

¹²⁷ On the role of natural magic and astrology in the Calabrian conspiracy, see William Eamon, "Natural Magic and Utopia in the Cinquecento: Campanella, the Della Porta Circle, and the Revolt of Calabria," *Memorie Domenicane*, n.s., 26 (1995), 369–402. In addition, see Peter J. Forshaw, "Astrology, Ritual and Revolution in the Works of Tommaso Campanella (1568–1639)," in Andrea Brady and Emily Butterworth, ed., *The Uses of the Future in Early Modern Europe* (London: 2010), pp. 181–97.

¹²⁸ Tommaso Campanella, *Articuli prophetales*, ed. Germana Ernst (Florence: 1977), pp. 201–5.

¹²⁹ Campanella, *Articuli prophetales*, pp. 244–5.

“mutation in human affairs” (*mutationes rerum humanarum*).¹³⁰ In defiance of conventional theology, Campanella argued that biblical prophecy—confirmed by astrology—not only justified the Calabrian revolt but made it an ineluctable necessity. He rested his defense on the claim that the conspiracy was not a rebellion at all, but was a natural and inevitable event, and that he was merely an instrument in the fulfillment of celestial and biblical prophecy.¹³¹ When questioned by authorities, several of the conspirators in the Calabrian uprising testified that the friar proclaimed himself a prophet, announcing that the year 1600 would witness great changes, including wars, revolutions, “transformations of states” (*mutationi di stati*), and the restoration of humanity’s “natural liberties.”¹³²

Campanella was not alone in seeing astrology as an instrument to forecast social and political upheavals. As we have seen, the German astrologer Leonhard Reynmann saw in the conjunction of 1524 signs of a general peasant upheaval, while Johannes Lichtenberger had predicted a peasants’ revolt for 1524–25. Astrology also fueled religious wars in France.¹³³ French historian Denis Crouzet, in his magisterial work, *Les guerriers de Dieu*, argues that an “intelligentsia of prophets,” consisting of clerics, astrologers, and soothsayers flourished in 16th century France. Crouzet maintains that astrologers such as Richard Roussat, the Catholic author of a 1520 prognostication, whipped up a frenzy of anti-Protestant sentiment and created a climate of intense millennial expectation. The astrologists’ prophecies of doom, he argues, created a “climate of anguish” among 16th century French Catholics and encouraged them to implement divine vengeance directly on the all-too-visible heretics around them. According to Crouzet, the extravagant rituals of violence and destruction that characterized the religious wars in France may be directly attributed to the “eschatological anguish” that resulted from the astrological prognostications.

In 1586, Pope Sixtus V promulgated the bull *Coeli et terrae* against astrology and all forms of divination. The bull solemnly declared that knowledge of the future was God’s exclusive preserve, and goes on to outlaw a host of divinatory arts. Astrologers, in particular, offend God, the bull continues. Far from being a useful science, astrology is one of the

¹³⁰ Amabile, *Congiura*, 3: 496; Firpo, *Supplizio*, p. 168.

¹³¹ Amabile, *Congiura*, 3: 478, pp. 480–2; Firpo, *Supplizio*, pp. 76, 84–94.

¹³² Amabile, *Congiura*, 3: 129–43.

¹³³ Crouzet, *Les guerriers de Dieu*, pp. 120–30.

most dangerous manifestations of human pride.¹³⁴ Containing an unusually detailed account of current “superstitions,” the bull is eloquent proof of the widespread practice of divination in various forms in early modern Europe.

Pope Sixtus's bull hardly ended astrological practice in Europe. A sensational episode in Rome in 1630 dramatically illustrates both astrology's grip on the imagination of intellectuals and its tenuous marriage with politics and religion at the end of the Renaissance. For years, astrologers had been predicting the imminent death of Pope Urban VIII. The rumors and predictions, doubtless fueled by Spanish propaganda, became widespread by 1628, when the Spanish openly called for a new conclave as if there were already a “vacant seat.” The pope, himself a firm believer in astrology, was intent on protecting himself from pestiferous astral influences by any possible means. In the summer of 1628, he summoned to the Papal palace none other than Fra Tommaso Campanella, who had recently been released from his long period of incarceration.

What happened next constitutes one of the most improbable chapters in astrology's strange history. Campanella immediately set about putting into practice the astrological theory that had been the foundation of the abortive Calabrian revolt. In order to take measures against disease-bearing eclipses and the evil influences of Mars and Saturn, Campanella and the pope retreated to a chamber sealed off from outside air, sprinkled the room with rose vinegar and other aromatic substances, and burnt incense of laurel, myrtle, and rosemary. They draped the room with silken cloths, and then lit two candles and five torches representing the seven planets. They listened to Jovial and Venereal music to disperse the malignant air, used stones, plants, colors, and odors belonging to the benevolent planets (Jupiter and Venus) to attract positive astral forces, and drank astrologically distilled liquors.¹³⁵ By such “philosophical” procedures, the friar and the pope tried to ward off the evil influences of Mars and Venus.

When Campanella's description of the bizarre event was accidentally printed in 1629 (Campanella claimed he had imprudently given the text to enemies, who had it printed), a loud and embarrassing scandal erupted. The exasperated pope, furious at Campanella for having revealed the

¹³⁴ Germana Ernst, “Astrology, Religion and Politics in Counter-Reformation Rome,” in Stephen Pumfrey, et al., eds., *Science, Culture and Popular Belief in Renaissance Europe* (Manchester: 1991), pp. 349–73 and 350–1.

¹³⁵ D.P. Walker, *Spiritual and Demonic Magic From Ficino to Campanella* (Notre Dame: 1975), pp. 206–7. For additional background, see Ernst, *Tommaso Campanella*, pp. 220–6.

astrological séance, immediately cracked down on the astrologers. One of the first victims of the pope's wrath was Don Orazio Morandi, abbot of the convent of Santa Prassede, which was a center of astrological practice. Arrested and charged with heresy, Morandi stood in as "the symbolic victim representing astrologers and freethinkers of all kinds."¹³⁶ After being subjected to extreme torture, he died in prison in November 1630.

A fierce backlash followed the Campanella affair. Urban VIII, in order once and for all to throttle the predictions of his early death and intrigues surrounding his succession, promulgated the ferocious bull *Inscrutabilis* against the astrologers. Confirming the bull of Sixtus V, it added an absolute ban on predicting the death of a pope or any of his family. In a sweeping condemnation of the art that dares "in its sinful curiosity to pry into the mysteries which are hidden in God's heart," Urban VIII's bull marks the end of Renaissance astrology.¹³⁷

Conclusion: The End of Astrology and Prophecy

Astrology's reputation declined steeply in the 17th century. In fact, signs of astrology's changing fortunes were already apparent by the mid-16th century, when Girolamo Cardano related an entrapment scheme by enemies to prevent his appointment to a professorial chair at the University of Bologna. As Cardano told the story, his opponents asked him to cast horoscopes "as if I were a soothsayer and prophet and not a professor of medicine."¹³⁸ In 1589, the Italian writer Tomaso Garzoni drew a firm line between astronomy, a respectable science, and popular astrology, a "superfluous and superstitious investigation." Garzoni ridiculed the sham prognosticators who sold crude almanacs and cast horoscopes in the piazzas, comparing them to the buffoonish *commedia dell'arte* figures "Capitano" Grillo and "Dottore" Graziano. Although Garzoni was speaking mostly of the prognosticators that crowded the piazzas, he even ridiculed the eminent astrologer Luca Guarico, who, Garzoni asserted, "couldn't tell a sheep from an ass."¹³⁹

Although astrology had long been the subject of condemnation and reproof by intellectuals and theologians, the tone of the criticism changed

¹³⁶ Dooley, *Morandi's Last Prophecy*, p. 166.

¹³⁷ Quoted in Ernst, "Astrology," p. 271.

¹³⁸ Nancy Siraisi, *The Clock and the Mirror: Girolamo Cardano and Renaissance Medicine* (Princeton: 1997), p. 190.

¹³⁹ Garzoni, *Piazza universale*, pp. 212–13, 617. Casali, *Spie*, p. 18.

noticeably in the second half of the 16th century. Formerly, the assault on astrology was grounded on carefully reasoned philosophical principles—Pico's sweeping and learned refutation, for example—a sign that astrology was taken seriously. Late Renaissance critiques of astrology, by contrast, tended toward outright ridicule. Instead of being the object of sustained critique or mere derision, astrology became a comic subject.

The change can be detected in the large number of burlesques of almanacs published in the 16th and 17th centuries.¹⁴⁰ One of the earliest was Rabelais's *Pantagrueline prognostication* (1533), which the poet attributes to the fictitious astrologer "Master Alcofribas Nasier." Writing of diseases to come during the year, the almanac prognosticates such calamities as:

This Year the Stone-blind shall see but very little; the Deaf shall hear but scurvily; the Dumb shan't speak very plain; the Rich shall be somewhat in a better case than the Poor, and the Healthy than the Sick. Whole Flocks, Herds, and Drovers of Sheep, Swine, and Oxen; Cocks and Hens, Ducks and Drakes, Geese and Ganders, shall go to Pot; . . . As for old Age, 'twill be incurable this Year, because of the Years past.¹⁴¹

Rabelais's use of truisms to ridicule astrology reappears in countless 16th century mock-prognostications. In 1572, the German humanist Johann Fischart published a satirical almanac that contained such platitudes as "This year there will be few gulden among the poor," and so on.¹⁴² "Adam Fouleweather," in an English mock-prognostication for the year 1591, wrote that an eclipse that year portended that women "shall learn to cozen young novices, and fetch in young Gentlemen, to the great overthrow of youth."¹⁴³ The use of such tired clichés for comic purposes in the mock-prognostications obviously had a satirical function, because, as Hugh Roberts points out, "by predicting the blindingly obvious, they imply that more portentous predictions are equally empty of meaning."¹⁴⁴

¹⁴⁰ For a survey of English works, see F.P. Wilson, "Some English Mock-Prognostications," *The Library*, ser. 4, 19 (1938): 6–43; for Italian mock-prognostications, see Casali, *Spie*, pp. 237–47.

¹⁴¹ *The works of Mr. Francis Rabelais, doctor in physick*, vol. 2, trans. Sir Thomas Urquhart (London: 1653), pp. 427–8.

¹⁴² Don Cameron Allen, *The Star-Crossed Renaissance: The Quarrel about Astrology and Its Influence in England* (New York: 1973), p. 211.

¹⁴³ Adam Fouleweather, *A wonderfull, strange and miraculous, astrologically prognostication for this year of our Lord God 1591* (London: 1591), B2.

¹⁴⁴ Hugh Roberts, "Mocking the Future in French Renaissance Mock-Prognostications," in Andrea Brady and Emily Butterworth, ed., *The Uses of the Future in Early Modern Europe* (London: 2010), pp. 198–214, 200.

Mock-almanac writers also used satire to critique social conventions and economic conditions. Gazing into the future, "Adam Fouleweather" forecast, "many poor men are like to fast on Sundays for want of food, and such as have not shoes go barefoot, if certain devout Cobblers prove not the more courteous." Eclipses for the coming year portend that brewers will water beer, the rich will prevail over the poor, and "many shall have more Spruce Beer in their bellies than wit in their heads."

Misogyny, too, shows up in the mock almanacs. Thus the French burlesque, *Prognostication des cons sauvaiges* (Prognostication of the Wild Cunts) of 1527, as its title suggests, uses female genitalia for divinatory purposes. Another French work, *Grandes et recreatives prognostication* (Great and Amusing Prognostications, 1625) by Astrophile Le Roupieux (Snotty-Nosed Astrophile) sports misogynistic jokes such as, "I do not speak of the moon's movement, of eclipses of its quarters, of its influences, because you will find all this with its retinue in women's heads."¹⁴⁵

In addition to being lampooned in mock prognostications, astrologers also became the butt of jokes by popular playwrights such as Thomas Middleton and Ben Jonson. In Middleton's play, *No Wit, No Help Like a Woman's*, the character Weatherwise quotes more than a dozen proverbs and catchphrases from Thomas Bretnor's almanac for 1611. Bretnor's name was practically synonymous with the almanac in 17th century England; yet despite having the respect of his scientific peers, he was repeatedly satirized on the stage and in print.¹⁴⁶

The brisk market for mock-prognostications shows that early modern people thought about astrology in many different ways—just as people do today. Skepticism of astrology coincided with a flourishing trade in almanacs and prognostications. On one hand, the comic portrayal of astrologers, both on the stage and in parodies of almanacs, suggests that the public figure of astrologer had become something of a fool. At the same time, the mock-prognostications, as well as the almanacs they parodied, indicate that astrology was woven into the fabric of everyday life. The very fact that prognostications were ridiculed is a sign that they were taken seriously, because parody cannot function in the absence of that which it parodies.¹⁴⁷

¹⁴⁵ Roberts, "Mocking the Future," p. 210.

¹⁴⁶ Bretnor also appears in Ben Jonson's *Devil is an ass* and in other comedies of the period.

¹⁴⁷ This point is made by Roberts, "Mocking the Future," p. 199.

Astrology survived, in spite of itself. The notion that the universe forms a coherent and meaningful whole, and that everything in this world has its correspondence in the larger world—the certainty that “on earth as it is in heaven,” as the Lord’s Prayer assured—gave astrology its authority. Contrary to the Church’s worry, early modern people did not regard astrology as a form of astral determinism. Nor did astrology necessarily imply fatalism. It was simply one of many forms of divination that people had recourse to in order to find missing persons and objects, peer into the future, and make life decisions. In the 1630s, the Inquisition of Toledo investigated an astrologer by the name of Cristóbal Rodríguez, whose eclectic blend of divinatory methods included astrology, conjuring, and hydromancy.¹⁴⁸ Even theologians, who had the most reason for concern about the astrologers’ activities, did not universally condemn the art. For some, including the prominent Lutheran reformer Phillip Melanchthon, astrology provided insights into God’s divine plan for the universe.¹⁴⁹

Astrology confirmed the popular belief that humans are part of a larger whole; hence their actions are not the result of chance or whim. In that sense, astrology fulfilled a basic human need of reducing uncertainty, and perhaps made people feel as if they have a greater sense of control over the future. Whether to know what may come, discover a thief, or find answers to questions that vexed them, people sought help in the stars, because there was nowhere else to turn.

¹⁴⁸ D. Sebastián Cirac Estopañán, *Los procesos de hechicerías en la Inquisición de Castilla la Nueva* (Madrid: 1942), p. 56.

¹⁴⁹ Barnes, *Prophecy*, p. 147.

CHAPTER SIX

ASTROLOGY AND POLITICS

Steven Vanden Broecke

*Introduction*¹

Beginning with the pioneering research of Aby Warburg, politics has never been far away from the attention of historians of astrology.² It is fair to say that the inverse observation has much less validity: a few exceptions notwithstanding, historians of politics have had virtually no interest in astrological discourse as a possible source of political theory, advice, legitimacy, or empowerment. This is somewhat remarkable, in view of the wealth of good historical studies demonstrating and analyzing the many ways in which astrology impinged on past politics.

Part of the explanation probably lies in a tendency of political historiography to essentialise ‘politics’, and to approach it as a universal and autonomous societal phenomenon, differentiated—at best—by local constitutions and external ‘influences’. Such an approach automatically implies an under-valuation of themes like the precise relation between rule and rationality, or between politics and myth; themes on which the study of astrology offers a special perspective. Another explanation, of course, lies in the credibility of a post-theological doctrinal authority called ‘science’. This authority’s valuation of astrology as irrational and/or superstitious is often adopted as a methodological premise by historians, justifying the facile labeling of past instances of astrological discourse as either ‘marginal’ or ‘irrelevant’.

The latter option was already evoked—and questioned—in the introduction of Auguste Bouché-Leclercq’s classic *L’astrologie grècque* (1899):

¹ The author wishes to express his deep gratitude to Brendan Dooley, for his invaluable maieutics in bringing this chapter to life.

² Aby Warburg, *Heidnisch-Antike Weissagung in Wort und Bild zu Luthers Zeiten* (Heidelberg, 1920); reprinted in: idem, *Ausgewählte Schriften und Würdigungen*, ed. Dieter Wuttke (Baden—Baden: Koerner, 1979), pp. 199–304.

For a long time, it has been believed—and this is perhaps still the case—that divination in general, and astrology in particular, have played a small role in history. Of course one finds that the oracles and prognostics of diviners intervene at all times to provoke or prevent, hasten or hold back the most serious actions; but it is supposed that, for men of State or army leaders, these were pretexts rather than reasons—commodious means to use popular credulity—, and that things would have happened just the same, or almost, without this intervention.³

Bouché-Leclercq's answer to these suggestions remains as valid today as it was in 1899: the historical record shows, with overwhelming clarity, that past rulers engaged astrology as a source of rationality rather than credulity.

Focusing on Europe's early modern past, this chapter seeks to do three things. First of all, to trace the different historiographical routes which historians have pursued for the study of astrology and politics. Secondly, to survey some of the main results which have been reached by following these routes. Thirdly, to point out a few under-acknowledged phenomena in the relation between astrology and politics in this period, and suggest promising routes for future research into this fascinating and important topic.

Renaissance Politics in the Historiography of Astrology

With the historiography of politics, the existing historiography of astrology appears to share at least two general presuppositions: (1) politics is a universal and autonomous societal phenomenon; (2) Renaissance politics is best approached as a transitional phase in which 'the city' or 'the state' provide the backdrop for violent disputes between different claimants to a societal monopoly on violence. Breaking with the medieval absence of such a monopoly (as well as with the medieval pattern of politics as a game played only in certain parts of society, and essentially 'happening to' the rest), Renaissance politics also unwittingly prepared the advent of 17th century absolutism. Against this shared background, astrology is generally approached as something which impinges on the phenomenon of rule, altering either its historical content or its very stability. More precisely, historians appear to have carved out three ways in which astrology impinged on Renaissance politics.

³ Auguste Bouché-Leclercq, *L'astrologie grèque* (Paris: 1899), p. iii.

The first of these three plays itself out in the relation of the ruler to the astrologer, and approaches astrology as something that could shape a ruler's course of action, and this through his belief in astrology. The verb 'shape', as opposed to 'determine', is chosen on purpose here: historical narratives which focus on this relation commonly seem to assume that the ruler maintained a distance with respect to the heeding of astrological advice (as opposed to the heeding of its content). This distance manifested itself most clearly in his rejection of "unpleasurable" predictions (e.g., predictions of imminent death), which—so historians claim—astrologers frequently modified so as not to incur the ruler's displeasure. In other words, it is assumed that the ruler did not approach astrology as a truth-discourse, but rather as a tool for success.

Within this overall pattern, astrology is held to have shaped the ruler's course of action in two basic ways. First of all, through its ascribed power to protect the ruler's body against misfortune (in the case of medical astrology). Secondly, through its ascribed power to protect his power against other rulers (by predicting wars suffered, or the outcomes of wars waged) or against his subjects (by predicting rebellion).⁴

The second way in which astrology impinged on Renaissance politics played itself out in the relation between (prospective) rulers and the ruled. It is supposed to have worked on the basis of the latter's belief in astrology, and approaches astrology as something that could found or undermine the conditions of possibility of a rule. More specifically, 'popular credulity' among the ruled is held to have been employed by claimants to political power to stabilize their reign, or by competitors for political power to destabilize each other's reign.

The third way in which astrology impinged on Renaissance politics played itself out in the relation between subjects and rule, and in this guise astrology was something which could legitimize rebellion in a given reign. This last theme may be considered as of particular significance for the early modern period. It has in fact been argued that 17th century experiences of an intimate relation between astrological discourse on the one hand, and rebellion and civil war on the other, had a specifically profound impact on the subsequent legitimacy and credibility of astrology. In other

⁴ Compare with the opening passage of Bernard Capp's chapter on "Almanacs and Politics": "The most famous mediaeval astrologers were drawn towards the courts of kings and princes. Their patrons valued their medical skills, and perhaps still more their ability to predict the outcome of wars and rebellions." Cf. Bernard Capp, *Astrology & the Popular Press. English Almanacs, 1500–1800* (London/Boston: Faber & Faber, 1979), p. 67.

words, the early modern period has not only been approached as a site of astrology having an impact on politics, but also of politics having an impact on astrology's 'status'.

Historiographical Results, I: Astrology and the Business of Rule

Astrology as a Tool of Political Prudence

Scholars like Hilary Carey and Jean-Patrice Boudet have done much to revise our knowledge of what Michael Shank felicitously called late medieval "astrological consulting" at court.⁵ Focusing on late medieval England, Carey researched the extent of astrologers' influence and power at court from Edward III to Henry VII, and this on the assumption that it was natural for secular rulers to be "attracted to astrology, as to any system which claimed to predict the future, avert disaster, and hasten the overthrow of the enemy".⁶ More specifically, astrologers are held to have been employed by rulers "to obtain political and tactical advantage over potential adversaries".⁷ For Carey, the main factor obstructing such attractions was a ruler's relation to the Church, as well as his confidence in God—rather than the stars—as a grand protector against misfortune.

Nevertheless, early Renaissance princely libraries show a steady presence of astrological manuscripts, even if their relative importance appears to have been highly variable. Exceptionally high proportions of astrological literature were typical of the libraries of King Charles V of France (founded in 1368), who was called "roy astrologien" by Christine de Pizan, and of Pedro IV and Martino I of Aragon. Elsewhere in Europe, respectable collections could be encountered at the courts of Francesco Gonzaga in Mantua, Filippo Maria Visconti in Milan, and Matthias Corvinus in Budapest.⁸

⁵ Michael Shank, "Academic Consulting in 15th-Century Vienna: The Case of Astrology" in: *Texts and Contexts in Ancient and Medieval Science. Studies on the Occasion of John E. Murdoch's Seventieth Birthday*, eds. Edith Sylla & Michael McVaugh (Leiden: Brill, 1997), pp. 245–70.

⁶ Hilary M. Carey, "Astrology at the English Court in the Later Middle Ages" in: *Astrology, Science, and Society. Historical Essays*, ed. Patrick Curry (Woodbridge: The Boydell Press, 1987), pp. 41–56, p. 41. For a more extensive discussion of the topics and results set down in this paper, see Hilary M. Carey, *Courting Disaster: Astrology at the English Court and University in the Later Middle Ages* (New York: St. Martin's Press, 1992).

⁷ Carey, "Astrology", p. 43.

⁸ Jean-Patrice Boudet, *Entre science et nigromance. Astrologie, divination et magie dans l'Occident médiéval (XII^e–XV^e siècle)* (Paris: Publications de la Sorbonne, 2006),

The main factor accounting for the courtly promotion of astrology in the late Middle Ages, Carey claimed, was the experience of misfortune and instability; but even then, associating with astrologers could also be taken as a sign of the ruler's illegitimacy in the eyes of God, and hence as a just cause for deposition.⁹ Whatever else one might think of such interpretations, there is some evidence that at least by the 15th century, astrologers were actually consulted by English rulers. There is even stronger and much more extensive evidence that astrologers were regarded *in toto* as political trouble-makers who were easily employed by the ruler's enemies. The latter tension only seems to have been broken by the late 15th century, when the royal art simultaneously transferred its political relevance to the much wider arena of print culture, and royal physician-astrologers like William Parron also became the compilers of annual prognostications.¹⁰

Focusing mostly on Central Europe, Michael Shank and Darin Hayton uncovered a much more attractive situation for the court astrologer. Emphasizing the convergence between university and court in the early Renaissance, both suggested that the academic promotion of astrology in this period cannot be dissociated from a widespread perception of its usefulness as a tool of political prudence by providing "information, propaganda, prestige, and power".¹¹ As had earlier been the case at the Transylvanian court of his father Johannes Hunyadi, the Hungarian king Matthias Corvinus habitually had a court astrologer in his retinue since at least the 1460s.¹² Likewise, Michael Shank has concluded that it is "safe to say that the Habsburg courts of the late 14th and 15th centuries relied consistently and extensively, but not exclusively, on academics and academically trained consultants for expertise—in theology, law, medicine, and also astrology".¹³

A very similar situation was uncovered for the Low Countries by Steven Vanden Broecke, where the university of Louvain (founded in 1426) was explicitly expected to provide the town with annual prognostications from its very beginning, and where members of the medical faculty regularly

pp. 303–5; Darin Hayton, "Expertise ex Stellis: Comets, Horoscopes, and Politics in Renaissance Hungary" in: *Osiris* 25 (2010), pp. 27–46 (esp. pp. 30–31).

⁹ Carey, "Astrology", pp. 43–5.

¹⁰ *Ibid.*, pp. 55–6.

¹¹ Boudet, *Entre science*, p. 311.

¹² Hayton, "Expertise ex stellis," pp. 29–30.

¹³ Shank, "Academic Consulting," p. 267.

appeared as astrological consultants for the Burgundian court.¹⁴ The latter pattern seems to have been continued until at least the 1520s, when the “dominant narrative of astrological patronage relations was expanded from public prediction to public reform [of the astrological art]. Public astrological practice previously supported the patron’s power through his access to correct predictions. Patrons were now invited to demonstrate their power by supporting the practice of astrological reform”.¹⁵

The French case has been investigated by Maxime Préaud and, especially, Jean-Patrice Boudet.¹⁶ Boudet privileged the question whether astrology played a positive role in the late medieval and early modern rise of State power, or whether the latter phenomenon had a rejection of astrology as its condition of possibility.¹⁷ After an apparent distancing in the first half of the 15th century, astrologers gradually became a steady fixture of the French court. In 1451, one encounters the first mention of a regularly remunerated “astrologien” at the court of Charles VII; by 1470, they were not one, but two. Contrary to the situation in England, then, astrology was much more actively countenanced as a form of *prospectiva*.¹⁸ The same may have applied at the 15th century Portuguese court, where authorship of a—now lost—astrological treatise was even attributed to Henry the Navigator (1394–1460).¹⁹ The court-astrologer appears to have been a particularly stable and long-standing presence in Spain, and this at least since the reign of Alfonso X of Castile. A recent study focusing on the court of Aragon in the late 14th and early 15th centuries amply confirms, however, the extent to which astrology was approached from within a fundamentally theological framework.²⁰

¹⁴ Steven Vanden Broecke, *The Limits of Influence. Pico, Louvain, and the Crisis of Renaissance Astrology* (Leiden/Boston: Brill, 2003), pp. 29–40, 81–112.

¹⁵ Vanden Broecke, *The Limits of Influence*, p. 143.

¹⁶ Cf. Maxime Préaud, *Les astrologues à la fin du moyen âge* (Paris: 1984); Jean-Patrice Boudet, “Les astrologues et le pouvoir sous le règne de Louis XI” in: *Observer, lire, écrire le ciel au Moyen Age*, ed. Bernard Ribémont (Paris: 1991), pp. 7–61; Jean-Patrice Boudet, “La papauté d’Avignon et l’astrologie” in: *Fin du monde et signes des temps; visionnaires et prophètes en France méridionale, fin XIII^e–début XV^e siècle* (Toulouse: Privat, 1992), pp. 257–93.

¹⁷ Cf. Jean-Patrice Boudet, “Les astrologues européens et la genèse de l’Etat moderne (XII^e–XVII^e siècle): une première approche” in: *L’Etat moderne et les élites, XIII^e–XVIII^e siècles. Apports et limites de la méthode prosopographique* (Paris: Publications de la Sorbonne, 1996), pp. 421–33, esp. p. 422.

¹⁸ Boudet, *Entre science*, pp. 309–10.

¹⁹ Cf. Guy Beaujouan, “Fernand Colomb et le traité d’astrologie d’Henri le Navigateur” in: *Romania* 82 (1961), pp. 96–105.

²⁰ Michael A. Ryan, *A Kingdom of Stargazers. Astrology and Authority in the Late Medieval Crown of Aragon* (Ithaca NY: Cornell U.P., 2011).

In line with an overall trend in early modern historiography, more recent scholars appear to be abandoning the ambitious, *longue durée* scope of Boudet (for whom astrology largely functions as an example of a timeless entity called 'magic'), and this in favor of localizing *tableaux* which focus less on the genesis of modernity than on the difference with the past. Perhaps not surprisingly, many of these recent studies were written by historians of science focusing on the history of 'knowledge' and 'information'. A focus on Renaissance astrology as firmly embedded in an early modern information economy has been meticulously unfolded in Brendan Dooley's study of the infamous Roman 'Morandi affair' of 1630, which directly spawned the anti-astrological papal bull *Inscrutabilis* (1631).²¹ Such choices have allowed historians to leave aside the more traditional assumption of a privileged relation between modern science and the real (interpreted either realistically or instrumentally), and to analyze mere 'beliefs' in the same way as one would study real 'science'.

At the same time, however, both scholarly traditions seem to agree in a somewhat traditional approach to political history and *histoire bataille* as such. For instance, Boudet has proclaimed that astrology's presence at Renaissance courts "in no way implies a determining role of the science of the stars in the decision-making process, nor in the changing relations of force between the powerful"; this seems to be a nice way of saying that the credibility of astrology has not made a single difference on political history *stricto sensu*.²² Only slightly less *a priorist* is the construal of the Renaissance ruler as fundamentally credulous with respect to astrology, and of the court astrologer as one who re-uses such credulity for his own benefit through his knowledge of the realm where things were 'really' happening. A historian of science like Monica Azzolini, for instance, appears to *know* that Renaissance court astrologers bound rulers to themselves by allowing the content of their predictions to be informed by objective political circumstances.²³

²¹ Brendan Dooley, *Morandi's Last Prophecy and the End of Renaissance Politics* (Princeton/Oxford: Princeton U.P., 2002).

²² Cf. Boudet, *Entre science*, p. 303.

²³ Cf. Monica Azzolini, "The Political Uses of Astrology: Predicting the Illness and Death of Princes, Kings and Popes in the Italian Renaissance" in: *Studies in History and Philosophy of Biological and Biomedical Sciences* 41 (2010), pp. 135–45, p. 138: "Predictably, given the philo-imperial role assumed by Florence after the marriage of Alessandro de' Medici with Emperor Charles V's natural daughter Margherita of Austria, Ristori indicated to Cosimo that his relationship with Pope Paul III and Francis I would not be easy, but that the stars favored him in his relationship with Charles V, Francesco Maria della Rovere, Federico II Gonzaga, and Ercole II d' Este [my italics]."

Renaissance Astrologers' Attitudes to Politics and the Ruler

What these studies also have in common is a sustained argument that Renaissance rulers actively came to value astrology as a standard component of political prudence (albeit in variable degrees). It remains to be seen, however, what this meant precisely, and how astrology fitted into it. Most of these studies are still based on modernist *a priori* understandings of 'politics' and 'rulership', of which it remains to be seen whether they were actually shared by Renaissance rulers. Secondly, the ruler's valuation of astrology is often based on third-person narratives, whose representativeness is difficult to evaluate. In view of these difficulties, we appear to be on firmer ground with the rare historians who focused on the figure of the Renaissance court astrologer, and more specifically on changing understandings of his own relation to politics and the figure of the ruler.

Taking this route, Barbara Bauer argued for a distinct shift in the court astrologer's self-understanding (*Selbstverständnis*) between the late 15th and early 17th century.²⁴ Initially posing as a prophet or inspired voice, the court astrologer first took up the role of the apolitical purveyor of a specialized knowledge in the second quarter of the 16th century, and finally that of the *politique* advisor by the early 17th century.²⁵ Bauer herself glossed this shift as manifesting a historical development towards an "autonomous science with its own institutions outside court and Church".²⁶ Bauer's analysis thus betrays a strong sense of the historical contingency that natural scientists should be able to find meaning and legitimacy for their offerings and productions outside their direct relation to the tenants of power *at all*.

However, her story could also be interpreted as positively moving towards a crystallization of 'politics' as a distinct sphere of social life. Consider Bauer's portrait of the 15th century prophet-astrologer:

²⁴ Barbara Bauer, "Die Rolle des Hofastrologen und Hofmathematicus als fürstlicher Berater" in: *Höfischer Humanismus*, ed. August Buck (Wienheim: VCH, 1989), pp. 93–117.

²⁵ Other recent historians, like Darin Hayton, privileged the figure of the expert astrologer whose astrological practice primarily captures the ruler's belief that there *are* reliable astrologers (itself rooted in the ruler's "fascination" with astrology and its material trinkets), thus establishing himself as an 'expert' astrologer who can at least count on the ruler's support (i.e., "patronage"). Once such a relation between astrologer and ruler is established, the 'everyday business' of advising the ruler on propitious times for undertakings, and warning him of impending dangers, becomes possible. Cf. Hayton, "Expertise *ex stellis*," p. 28.

²⁶ Bauer, "Die Rolle", p. 93.

In the beginning, the court astrologer embraced the role of the prophet, accountable to no-one regarding the sources of his wisdom—divine inspiration after the example of the biblical prophets, rather than personal experience or academic training. His ruler was pleased with his prophecies as long as these served his image and legitimated his rule, even when the bases of predictions were unverifiable.²⁷

“In the beginning”, Bauer takes the relation of the astrologer to the ruler as her base-line (structured around the latter’s “pleasure” in the astrologer’s offerings, not around his respect for the individual astrologer’s expertise). This basic relation remained intact throughout the subsequent incarnations of the astrologer, but increasingly manifested a distancing of the astrologer, which Bauer interprets in terms of the political theory of early absolutism. This discourse introduced a strong distinction between the relation of the *consiliarius* with the prince on the one hand, and the former’s duty with respect to the *bonum commune* on the other. It also privileged the last element over the first—effectively turning the ruler into the site rather than the source of prudence. It is in this gap that Bauer situated 17th century court astrologers like Johannes Kepler, who is credited with consciously altering the content of his productions—and publicly relativizing their importance—so as not to go against the *bonum commune*, despite the given credulity of an audience which comprised both ruler and ruled. Late Renaissance astrologers, then, supposedly sought to serve the common good directly, rather than through the figure of the ruler.

Historiographical Results, II. Astrology and the Legitimacy of the Ruler

Compared to the *a priori* distinction between the figure of the astrologer and the figure of the ruled, which we find in scholars like Boudet or Azzolini, Bauer thus started out from the confluence of these two figures in the late medieval court-astrologer. On this basis, she gradually traces the emergence of this distinction in the 16th century, and an ulterior politicization of astrological practice in the 17th century. Both traditions abandoned a third and older interpretation of court astrologers as mere political propagandists (i.e., as supplementing the figure of the ruler). Historians of Renaissance prognostication like Paola Zambelli or Nicolette Mout, for instance, unproblematically interpreted the content of astrological predictions as tools by which an entire social body of political

²⁷ Ibid., p. 96.

subjects like passive consumers could be seduced towards one rule(r) rather than another.²⁸ Outside the courtly context, early modern astrological productions have also been interpreted as truth-telling informed by the prognosticator's *personal* political convictions.²⁹

Such analyses robustly credited astrology with the power to make a difference to political history (at least on the 'popular' level). Here too, they have also given way to more localized and limited explorations of the ways in which early modern astrology bound the ruled to a ruler in the first place, and therefore functioned as ways of legitimizing the ruler *as ruler* among the credulous.³⁰ One strand of such research has been developed by art historians seeking to uncover how artistic or literary productions of the Renaissance re-used astrology as a means of 'propaganda', and this by naturalizing political authority and legitimacy. Pioneering in this respect, was Fritz Saxl's 1934 study of the horoscope ceiling which Baldassare Peruzzi painted for Agostino Chigi in the Villa Farnesina (1511).³¹ About half a century later, Janet Cox-Rearick devoted an entire monograph to the cosmic and astrological imagery, used between 1480 and 1580 "to demonstrate that the Medici were predestined by Divine Providence to rule" over Florence.³² In Renaissance Hungary too, King Matthias Corvinus appears to have had frescoes depicting his birth horoscope and the horoscope for his coronation, painted on the ceilings of his library.³³

The relation between astrology and political authority has also come to the attention of scholars working from within the history of science-idiom, partly inspired by revisionist attempts to understand baroque court science

²⁸ Harry Rusche, "Merlini Anglici: Astrology and Propaganda from 1644 to 1651" in: *The English Historical Review* 80 (1965), pp. 322–33; Paola Zambelli, "Fine del mondo o inizio della propaganda?" in: *Scienze. credenze occulte, livelli di cultura. Convegno Internazionale di Studi* (Florence: Olschki, 1982), pp. 291–368; Nicolette Mout, "Prognostica tijdens de Nederlandse Opstand" in: *Kerkhistorische opstellen aangeboden aan Prof. dr. J. van den Berg*, eds. Cornelis Augustijn et al. (Kampen: 1987), pp. 9–19.

²⁹ H.J. Nalis & Jeroen Salman, "Wie sal ick dan wes goedes kunnen prognosticeren?" Deventer almanakken en prognosticaties in roerige tijden" in: *Deventer Jaarboek* 1994, pp. 6–39.

³⁰ An interpretive framework which echoes that adopted by historians analyzing urban culture as the effect of a "theatre state".

³¹ Fritz Saxl, *La fede astrologica di Agostino Chigi. Interpretazione dei dipinti di Baldassare Peruzzi nella Sala di Galatea della Farnesina* (Rome, 1934).

³² Janet Cox-Rearick, *Dynasty and Destiny in Medici Art: Pontormo, Leo X, and the Two Cosimos* (Princeton: Princeton U.P., 1984), p. 6.

³³ Hayton, "Expertise *ex stellis*", p. 30.

as the generator of courtly spectacles, relative to the ruler's authority.³⁴ Still focusing on the case of Renaissance Hungary, Darin Hayton painted a fascinating portrait of court astrology as a status-heightening production, relative to "the public". The ruler's "status" was heightened through the very fact of his having access to the secrets of astrology, and through his becoming a protagonist in astrological images and narratives which naturalized his violent and artificial rule. In this way, astrologer and ruler mutually satisfied each other's desire for legitimacy.

Focusing on Renaissance Italy, where historians have traditionally analyzed political strife as much more than mere "efforts to resist authority",³⁵ Monica Azzolini has taken this theme even further. She has done so by focusing on the relation between different claimants to power, rather than on the relation between ruler and ruled. This has translated into a strict focus on astrological predictions as technical products, whose validity (what I have hitherto called "credibility") is simply a given deriving from shared theoretical beliefs (e.g., a shared belief in celestial influence).³⁶ Their value, on the other hand, derives from their utility in the nasty localized business of dominating, eliminating and conquering (but not disciplining) which the historian calls "Renaissance politics". More specifically, Azzolini sees such utility as being actualized by inserting these valuable products in an "information economy" (recalling Brendan Dooley's approach to Renaissance astrology), where they become "weapons" of destruction undermining the position of a rival ruler among his credulous subjects.³⁷ In this game, the ultimate weapon was the prediction of the death of a ruler, and it is this which made "astrology unwelcome" at some courts, and led rulers to "make it an offence to try to predict the death of the king": such predictions might be true, but they also destabilized the reign.

Once again, however, caution is called for, and this for at least two reasons. First of all, there is the fact that scholars like Janet Cox-Rearick

³⁴ The most well-known exponent of such an interpretation is probably Mario Biagioli, *Galileo, Courtier. The Practice of Science and the Culture of Absolutism* (Chicago: University of Chicago Press, 1993).

³⁵ Hayton, "Expertise," p. 30.

³⁶ Consider the following interpretation of the motivations behind Urban VIII's anti-astrological bull *Inscrutabilis* (1631): "Indeed, the forceful ban on judicial astrology was not so much motivated by theological arguments, nor by political fears alone (although these certainly existed), but more significantly by the pope's deeply held belief in this predictive art, and his authentic apprehension for his own life." Quote taken from Azzolini, "The political uses", p. 136.

³⁷ Azzolini, "The political uses", pp. 135, 136, 141, 142, 145.

took it as methodologically evident that languages of destiny functioned by being superimposed on actual 'political' relations of domination and rule; in other words, that they were fundamentally ideological. These are serious claims to make in the absence of a proper study of historical actors' understandings of notions like destiny, historicity, or even politics. Secondly, the frequent suggestions that Renaissance rulers ultimately approached astrology as a discourse which *should* support their rule (such as we found it in Monica Azzolini's work), is curiously contradicted by—of all people—Niccolò Machiavelli's claim that such an attitude lay at the origins of the ruin of pagan societies.

In *Discorsi* I.12, Machiavelli emphasized that "those princes or those republics which desire to remain free from corruption, should above all else maintain incorrupt the ceremonies of their religion and should hold them always in veneration; for there can be no stronger indication of the decline of a province than to see divine worship neglected".³⁸ Interestingly, Machiavelli did not interpret divine worship as a strictly human phenomenon, but as one which was really aimed at a being which was commonly called 'God'.³⁹ In line with the humanist imperative of taking representations of Greco-Roman ideas as guides to organizing life in the *seculum*, moreover, Machiavelli also took the realm of prophecy and divination as a legitimate and, indeed, necessary antechamber to divine worship, on the condition that such foretellings were not informed by human power-relations:

(...) thus religious life among the gentiles was based on the responses given by oracles and upon a body of soothsayers and diviners. All the rest of its ceremonies, sacrifices and rites depended on these, for it is easy to believe that the god who can predict your future, be it good or evil, can also bring it about. (...) But when the oracles began to say what was pleasing to the powerful, and this deception [i.e., this departure from worship of the divine] was discovered by the people, they became incredulous and inclined to subvert any good institution.⁴⁰

³⁸ "Quelli principi o quelle repubbliche, le quali si vogliono mantenere incorrotte, hanno sopra ogni altra cosa a mantenere incorrotte le cerimonie della loro religione, e tenerle sempre nella loro venerazione; perché nessuno maggiore indizio si puote avere della rovina d'una provincia, che vedere dispregiato il culto divino." Cf. <http://www.classicitaliani.it/machiav/mac32.htm#12> (last accessed 21 August 2012).

³⁹ Cf. Maurizio Viroli, *Machiavelli's God*, trans. Antony Shugaar (Princeton NJ: Princeton U.P., 2010).

⁴⁰ Niccolò Machiavelli, *Discourses*, trans. Leslie J. Walker, 2 vols. (New Haven: Yale U.P., 1950), vol. 1, pp. 243–4.

In other words, the perversion of religious customs threatened to rupture the obedience and availability of the people to 'rule'. It was the task of the ruler, Machiavelli continued, to do everything so as to foster religious practice and submit to its effects, even if he *personally* does not believe in it. In this respect, more than in others, the Machiavellian ruler was supposed to be the absolute servant of the goodness and unity of the commonwealth.⁴¹

Historiographical Results, III. Astrology and the Breakdown of Rule

Astrology has also been portrayed as a source of popular empowerment. Probably the most far-reaching and theoretically sophisticated version of this has been developed by Patrick Curry. In *Prophecy and Power*, Curry approached astrology as a source of empowerment which encountered its "halcyon days" during the English Civil War. At that volatile time, a fundamental inseparability of "politics, religion, and eschatology" supposedly unmoored itself from the traditional stability of Church and State, and transferred itself to astrology. This astrology, Curry emphasized, offered:

(...) a traditionally sanctioned way to discern a pattern, to extract relevant meanings from the chaos of current events, and to discern future ones. In the first place, the heavens promised to reveal the divine opinion of particular religious or political positions, in circumstances where it was almost impossible not to adhere to one or another such view. Secondly, they offered a means of divine (but itself disinterested) advice in making critically important decisions (...)⁴²

Curry clearly interprets astrology as a prophetic art, in the sense that it is held not only to offer technical knowledge, but meaning and guidance: it is not only engaged as a source of successful action, but of legitimate action. In this sense, the breakdown of Church censorship in the years preceding the Civil War cleared the ground for a society in which the astrologers were the real spiritual leaders.

⁴¹ Contrary to what Parel suggests, Machiavelli does seem to believe that miracles are more than political creations for fostering allegiance, and that the notion makes sense; he simply claims that the ruler's personal investment in such an experience, giving consequences to it ('belief in miracles' in this sense) is irrelevant to his supporting them, in as far as (1) they cannot arise in false miracles, and (2) they foster religiosity. Cf. Anthony J. Parel, *The Machiavellian Cosmos* (New Haven: Yale U.P., 1992), p. 51.

⁴² Patrick Curry, *Prophecy and Power. Astrology in Modern England* (Cambridge: Polity Press, 1989), p. 22.

Conversely, Curry also interpreted the apparent sudden breakdown of astrology's credibility around the middle of the 17th century as a political event. According to him, post-Restoration denunciations of popular 'enthusiasm' were in fact part of a hegemonic crackdown of new socio-political elites on alternative belief systems, including those which—like astrology—derived at least part of their attraction from their scientific formalities. Curry thus claimed that:

(...) the overall drift of events is crystal clear. That drift was firmly to marginalize and discredit astrologers as such (regardless of the individual astrologer's politics or personality); and thereby also to destroy the power of their astrology, whose natural audience was the popular readership of annual almanacs. On the desirability of this, and in their various efforts to bring it about, the different factions of post-Restoration England were united much more than they differed.⁴³

Astrology's centrality to 'popular' empowerment during the Civil War allowed a new object of concern to enter the gaze of post-Restoration elites concerned with the stability of the State. These elites now distanced themselves from astrology's very legitimacy (which was not the case in earlier censorship),⁴⁴ and expressed this retreat by branding the art as "enthusiastic" and "vulgar". In doing so, Curry provided a strong political gloss on Peter Burke's thesis of a 17th century withdrawal of the elites from a shared 'popular' culture.⁴⁵

Only a few years later, Hervé Drevillon's study of astrology in the French *grand siècle* offered a very similar analysis, but with at least one important difference. Drevillon begins from a position that is reminiscent of Bauer: an original situation in which the diviners were "simultaneously astrologers and prophets" gave way to a separation between astrology and prophecy, and a reconnaissance of the former as an art.⁴⁶ But Drevillon also emphasizes a simultaneous and more profound change in the way that astrological productions were read and received: a critical distance manifests itself in which the art becomes a source of mere "dreams".⁴⁷ According to Drevillon, this formed the basis for a *subsequent* 'politicization'

⁴³ Ibid., pp. 51–2.

⁴⁴ Ibid., p. 20.

⁴⁵ Patrick Curry, "Astrology in Early Modern England: the Making of a Vulgar Knowledge," in Stephen Pumfrey, Paolo Rossi, and Maurice Slawinski, eds., *Science, Culture, and Popular Belief in Renaissance Europe* (Manchester, 1991), pp. 274–291, p. 279.

⁴⁶ Hervé Drevillon, *Lire et écrire l'avenir. L'astrologie dans la France du Grand Siècle (1610–1715)* (Seyssel: Champ Vallon, 1996), p. 11.

⁴⁷ Ibid., p. 13.

of public predictions as antithetical to the stability of the nascent State. Contrary to Curry, then, Drevillon does not interpret the incredibility of astrology among French 17th century elites as somehow *identical* with concerns over social order after the implosion of an original alliance between prophecy and power. While English astrology is held to have been emasculated through a process of translation and appropriation of its concerns and theoretical content, French astrology underwent this fate through a process of being denied its putative connection to the real.

Curry and Drevillon thus converged around an interpretation of the 17th century as the site of an epochal change, in which technicians of the stability of the state, at least in their public and/or official capacity, began to be concerned *more* with astrological than with celestial influence, and did so from a perspective in which astrological influence became a threat to the stability of the State as such. These suggestions will be taken up and further evaluated below (cf. section 8).

*Astrology and Renaissance Political Theory:
The Cases of Nicole Oresme and Niccolò Machiavelli*

Early Politicization of Concerns about the Credibility of the Astrological Art: Nicole Oresme

It has often been noted that the 14th century marks the beginning of new currents in the old tradition of astrological criticism.⁴⁸ As a prime example of such changes, historians often point up the anti-astrological writings of Nicole Oresme (c. 1320–1382).⁴⁹ Oresme's critique has usually been interpreted as a singularly thorough attempt to ground the incredibility of the art in scholastic natural philosophy, and specifically in the relation

⁴⁸ On this tradition in Antiquity and the Middle Ages, see: Anthony A. Long, "Astrology: Arguments Pro and Contra" in: Idem, *From Epicurus to Epictetus. Studies in Hellenistic and Roman Philosophy* (Oxford: 2006), pp. 128–153; Theodore Otto Wedel, *The Medieval Attitude toward Astrology, particularly in England* (New Haven: Yale U.P., 1920).

⁴⁹ On Oresme and astrology, see G.W. Coopland, *Nicole Oresme and the astrologers: a study of his Livre de divinacions* (Cambridge MA: Harvard U.P., 1952); Stefano Caroti, "Nicole Oresme, Quaestio contra divinatores horoscopios" in: *Archives d'histoire doctrinale et littéraire du moyen âge* 43(1976), pp. 201–310; Stefano Caroti, "La Critica Contro l'Astrologia di Nicole Oresme e la sua Influenza nel Medioevo e nel Rinascimento" in: *Atti della Accademia Nazionale dei Lincei. Classe di scienze morali, storiche e filologiche*, Memorie, ser. 8, vol. 23 (1979), pp. 543–684; Stefano Caroti, "Nicole Oresme's Polemic against Astrology in his *Quodlibeta*" in: *Astrology, Science and Society. Historical Essays*, ed. Patrick Curry (Woodbridge: The Boydell Press, 1987), pp. 75–93.

between superlunary and sublunary causation. Although this claim is certainly correct, it also absolved historians from giving much consideration to what one might call the political aspect of Oresme's problematic. This is odd, in view of the fact that his most influential anti-astrological treatises made the problem of astrology's credibility explicitly relative to the figure of the prince. The short *Tractatus contra iudiciarios astronomos*, for instance, has the following opening: "Many princes and magnates, moved by harmful curiosity, draw upon vain arts to seek out what is hidden and to investigate future things. I have devoted the following treatise to impugning this error".⁵⁰

Likewise, Oresme's *Livre de divinacions* claimed that astrology "is more dangerous to persons of state, such as princes and lords to whom public government belongs".⁵¹

It would appear, then, that Oresme's critique is also exemplary of a novel politicization of concerns about astrology, and this in a very specific sense. Contrary to Greco-Roman or earlier Christian critiques of astrology, it would appear that Oresme's critique was no longer focused on the dangers of astrological practice, relative to the desire to practice a given relation to a divine will.⁵² Contrary to Greco-Roman critiques, Oresme was largely unconcerned with the possibility for the soul to access a divine care for mortals, nor with the possibility of opening up a tranquility of the soul through astrological foretelling. Contrary to previous Christian theological critiques, Oresme was largely unconcerned with astrology's legitimacy as a possible way of practicing one's given relation to the God of Israel by making one's body available as a site where the divine will could incarnate itself.

Astrology and the Human Relation to Fortune

Instead, Oresme's critique only concerned itself with the dangers of engaging the astrological art *as divination*, and this relative to the possibility of misfortune. From the very beginning of Oresme's vernacular *Livre de divinacions*, the latter theme shaped his entire discourse. In chapter 1 of

⁵⁰ Hubert Pruckner, *Studien zu den astrologischen Schriften des Heinrich von Langenstein* (Leipzig/Berlin: B.G. Teubner, 1933), p. 227.

⁵¹ Coopland, *Nicole Oresme*, p. 50.

⁵² On this older motivation behind astrological criticism, see Steven Vanden Broecke, "Astrology and Care for the Self in the Ancient World"; Steven Vanden Broecke, "Consolations of Astrology. The Stars, Apocalypticism, and Theology at Louvain University, 1521," both forthcoming.

the *Livre*, Oresme began by distinguishing between six different parts of astrology, each offering different predictive possibilities. The next chapter, however, introduced a more fundamental distinction between these six parts, based on whether future events could be foreknown by any of them *at all*. Significantly, this redistribution was effected on the basis of two possible sources⁵³ of future events, which Oresme calls “effects of nature” and “effects of fortune”. Concerning these, Oresme consistently claimed that effects of fortune could not possibly be foreknown by man, while effects of nature could. In the standard distinction between “natural” and “superstitious” astrology, the latter (which Oresme calls “judicial astrology”) thus became relative to a realm in between nature and its Creator, defined by humanity’s given relation to something which Oresme called “fortune”,⁵⁴ contrary to what was obtained in older analyses stipulating a specific relation between astrology and fortune (such as Cicero’s *De divinatione*). However, Oresme did not approach fortune as the name of the autonomous partner in one of the many relations in which birth inexorably embedded human existence, but rather as a presence which manifested itself in the felicitous or infelicitous outcome of actions which humans embarked upon. Against this background, Oresme suggested that the realm of fortune fundamentally *belonged* to nature, but that it also marked an *inherent* limitation of humanity’s ability to foresee the fortune of actions embarked upon, inexorably inclining these towards a fortunate or unfortunate outcome.⁵⁵

At the same time, Oresme continued the older tradition which privileged the possibility of establishing ‘right relations’ with this inexorable partner-unto-death, rather than later concerns with the possibility of positively mastering the relation to fortune (exemplified, for instance, in Machiavelli). This concern was forcefully stated in the concluding lines of the *Livre*, where Oresme reiterated his interest in defending the

⁵³ The terminology of “sources”, as opposed to “causes”, is important here. “Causes” are here taken as referring to what I would call “systems of production of the content of events”. “Sources”, on the other hand, name the reason why an event *as such* happens, rather than does not happen.

⁵⁴ Cf. Alfons Doren, “Fortuna im Mittelalter und in der Renaissance” in: *Vorträge der Bibliothek Warburg* 2 (1922–3), pp. 71–115; Charles Trinkaus, *Adversity’s Noblemen. The Italian Humanists on Happiness* (New York: Columbia U.P., 1940); Vincenzo Cioffari, “The Function of Fortune in Dante, Boccaccio, and Machiavelli” in: *Italica* 24 (1947), pp. 1–13; Antonino Poppi, “Fate, fortune, providence and human freedom” in: *The Cambridge History of Renaissance Philosophy*, eds. Charles B. Schmitt et al. (Cambridge: Cambridge U.P., 1988), pp. 641–667.

⁵⁵ Coopland, *Nicole Oresme*, pp. 80–2.

possibility of human wills which would “not be governed by fortune, but would rather themselves govern fortune”.⁵⁶ Contrary to that obtained in Cicero’s *De divinatione*, then, Oresme’s critique was not motivated by the conviction that astrology *only* engaged fortune, but that it did not offer the possibility of *negotiating* one’s relation to fortune.

The Figure of the Ruler and the People’s Relation to Fortune

As we have seen, this novel emphasis on the relation to fortune appears to go hand in hand with a novel emphasis on the figure of the ruler as the site of a negotiation of this relation. On closer inspection, it gradually becomes clear that this is to be understood against the background of a different conceptualization of the relation between the ruler and the people (of God). Contrary to that obtained in older political discourses, Oresme presents us with a ruler who is not simply the locus of specific faculties or possibilities of this social body; more specifically, of the possibility of taking on the permanent presence of human enemies on the one hand, and of allowing justice to reign in a given social body on the other. Instead, Oresme’s ideal ruler now also comes forth as a separate agent, expected to devote himself to the dual task of extracting God’s people from the vicissitudes of fortune on the one hand, and of not violating the freedom of this people (i.e., their *direct* relation to God) on the other. It is precisely against this background that the very possibility of negotiating fortune, and of the ruler’s actions not necessarily being a positive source of misfortune, becomes a central concern. The figure of the astrologer-king provided Oresme with a familiar image through which to voice and develop such novel concerns.

In doing so, of course, Oresme felt comfortable that he was not merely speaking in his own name, but in that of human History and of God himself. Concerning the latter, Oresme in this instance approached Scripture not so much as the site of a positive unveiling of the divine will, but rather as the source of a divinely offered possibility to transcend the realm of nature. It is the absence of this possibility which God wished man to be protected against, and this *through* scriptural ordinations against astrology—to which Oresme devoted chapter 9 of the *Livre*. This was set off against natural human curiosity in chapter 10: “(…) the human race is

⁵⁶ Ibid., p. 120.

by nature inclined to idolatry. And (...) such divinations are (...) a kind of idolatry, and it is vanity, folly, and presumption for mortal human nature to desire to know what belongs to God alone”.⁵⁷

Likewise, the history of human rulership was mined by Oresme for *exempla* illustrating and supplementing this divine ordination, by offering a record of the misfortunes which astrologer-kings had incurred *in pluribus*. Accordingly, the beginning of the second chapter of Oresme’s *Tractatus* claimed that:

If we consider the ancient histories, we find that kings who devoted themselves to such things, were unfortunate for the most part, as if indignant fortune fought them more bitterly who explored her decisions with vain arts. But to speak more truthfully, God rightfully cast down those who imprudently hold fast to resisting the divine ordination, since it is fitting that the public regimen is provided for not by lots, but by art, and not by divinations, but by practical counsel, with God’s help being invoked.⁵⁸

Reason, Memory, and the ‘Naturalization’ of Astrology

Despite the impossibility of negotiating the relation to fortune through divination of coming events, Oresme’s critique of astrology must also be read as a positive defence of that which—in his opinion—did offer such a possibility. This possibility, Oresme explained, was offered by: “(...) reason and memory, by which man can acquire human prudence of considering past and present things, as well as things that may come, through credible conjecture, good counsel, and good industry, and all this better than by hearing such divinations”.⁵⁹

Further insight into the central role accorded to “reason and memory” may be gained from the following passage in chapter 15 of the *Livre*:

Pliny, in the seventh book of his Natural History, narrates the miseries of human nature in comparison to, and in respect of, the other animals, and says that man is born mute, helpless, and impotent, and that he knows nothing without teaching except to weep, and this is not so for the other animals. Hence, it does not follow that if nature has given a gift to another animal, that she has given it to man, and we see this quite clearly. But God and nature have given man something better, namely, reason and memory, by which man can acquire human prudence of considering past and

⁵⁷ Ibid., p. 81.

⁵⁸ Ibid., p. 125.

⁵⁹ Ibid., p. 110.

present things, as well as things that may come, through credible conjecture, good counsel, and good industry, and all this better than by hearing such divinations.⁶⁰

This passage was written in reply to an argument in favor of divination, voiced in chapter 6 of the *Livre*. It was said there that “some dumb animals perceive the effect of things to come, like the swan which sings against its death, or a bird called halcyon which feels the fine weather and calm sea coming and then makes its nest, according to Pliny”.⁶¹ What matters here is not the apparent inconsistency in Pliny’s claims—Oresme rephrases the latter in such a way that they receive a different meaning anyway. What does matter is that Oresme employs *Nat. Hist.* VII.2 to make the claim that there is a profound rupture between man and beast in relation to misfortune—a claim which is not in the original Plinian text.

This claim requires careful understanding. Oresme does not positively say that man, unlike other animals, is not embedded in a ‘macrocosmic’ cycle of changes oscillating between the advent of fortune and misfortune. He does claim, however, that such embedding, which manifests itself in corporeal gestures, is not *innate* with man, but must be acquired. The source or condition of possibility for this acquisition appears to be something called “reason and memory”. In other words, Oresme here seems to institute a rupture between man and cosmos. This rupture does not render the astrological art irrelevant, but changes the terms for its meaningfulness. Even though Oresme clearly grants the *possibility* of taking up the “hearing of divinations” as a human analogue to animal perception of “things to come”, he simultaneously says that there is a better option available to man, granted by nature *and God*: namely, “reason and memory”.

More specifically, the focus on reason and memory allows Oresme to approach both the regularity of celestial events and the rules of astrological books (chapter 2 of the *Livre* does introduce this distinction) as radically over-determined by what we would call ‘history’. In the case of the regularity of celestial events, we find this nicely adumbrated in the following passage: “I say that things to come are not written in the heavens, except in as far as from congruent movements one can know coming constellations, which will be either cause or sign of some inclinations and diverse fortunes, always exempting the freedom of the human will”.⁶²

⁶⁰ Ibid., pp. 108–10.

⁶¹ Ibid., p. 64; Oresme references *Nat. Hist.* X, 47.32.

⁶² Ibid., pp. 110–2.

Oresme seems to be saying that future events, such as celestial constellations, are not directly announced in the heavens (i.e., the visible heavens are no source of prophecy), but can only be inferred through knowledge of the motions of celestial bodies until this time. Likewise, Oresme insisted that when it comes to "(...) knowing what things might come and making provision for these, consideration of histories of past time gives very great aid".⁶³ This is an early version of a claim that many modern historians are familiar with: the claim that the past has lessons to teach. It would appear that the issue of misfortune here manifests itself in the form of a disjunction between 'past' and things to come, and plays itself out in the eternal present of reason and memory. In this eternal present, books are fast losing their old function as conveyors of prophecies, only to acquire a new function as repositories of the past whose meaningfulness to readers no longer resides in their mythical, but in their exemplary contents. In other words, "history" is being invented here.⁶⁴ We may also note that the very same attitude underlay Oresme's approach to astrological books,⁶⁵ i.e., of castigating their content so as to safeguard the credibility of a natural astrology, thus simultaneously legitimating a reformist option.⁶⁶

All this clearly shows that it is not only a factual mistake, but a serious misunderstanding of Oresme's own conceptual framework and concerns, to simply portray him as an 'anti-astrological author' or 'opponent of astrology'. At the heart of the *Livre de divinacions* stands the claim that human reason and memory are *solely* capable of negotiating the relation to fortune, taken here as the source of differentiated outcomes of human

⁶³ Ibid., p. 110.

⁶⁴ Cf. the classic study by Amos Funkenstein, *Heilsplan und natürliche Entwicklung. Gegenwartsbestimmung im Geschichtsdenken des Mittelalters* (Munich: Nymphenburger, 1965).

⁶⁵ In chapter two of the *Livre de divinacions*, Oresme treats us to a fine-grained analysis of the different problems of astrology. As the first problem, Oresme identifies the possible insufficiency of a *savoir* with respect to the reality of future events, and therefore the difference between an imprecise human art and a divinely inspired prophecy (Oresme goes on to declare such imprecision harmless for the sufficiency of the art). Oresme also warned his readers against an uncritical trust in astrological books (because the original verification of their sayings and rules was necessarily a localized phenomenon), against an uncritical trust in "the astronomers" at the expense of other figures with *savoir* concerning the future (notably mariners and husbandmen), and against a disregard for both fortune and the powers of the human will. For Oresme, astrology thus holds a special place in the general category of divination because it is partially reliable and because it can count on the absolute natural regularity of celestial bodies. Nevertheless, we simultaneously find the art being juxtaposed with geomancy, palmistry, and dreams in the more general category of *divination*: Coopland, *Nicole Oresme*, pp. 58, 86.

⁶⁶ Ibid., p. 104.

action. Oresme fully countenances the possibility of prediction through the heavens, but re-conceptualizes this as offering a mere knowledge of the results of 'natural regularities'. The latter knowledge (which modern scientific culture, of course, holds to be the very key for insight into 'the future') is fairly uninteresting and unimportant to the figure of the Oresmian ruler.

*Mastering Fortune, Astrology, and Knowledge of the 'Spirit of the Times':
Niccolò Machiavelli*

In the introduction to this chapter, we pointed out that historians of early modern politics and political theory have had virtually no interest in astrology, and this for at least two reasons. On the one hand, there is these historians' easy assumption that politics, of itself, is an autonomous and universal human practice which sets itself the task of establishing and maintaining order in a human society. On the other hand, there is the equally easy assumption that 'society' and 'nature' are two distinct things, and that political theory and practice only involves questions pertaining to the first, with nature only being taken into account in as far as it impinges on the stability of a society.

One important exception to this general pattern is Anthony Parel. In *The Machiavellian Cosmos* (1992), Parel deployed the example of Machiavelli to show how the very definition of Renaissance politics, its meaningfulness, and its central pursuits and challenges, were carved out against the background of a cosmic anthropology for which astrology provided the language. Parel's exercise leaves no doubt that the culture of mundane astrology, as we encounter it in the Renaissance prognostication (cf. section 7), was omnipresent in Machiavelli's work. In line with the prognosticators, Parel's investigation of Machiavelli's cosmic language confirms earlier suggestions that Machiavelli did not approach history as a man-made process, or even as one in which man had the upper-hand.⁶⁷

Emblematic, in this regard, is the passage in *The Prince* where Machiavelli states that Fortune "leaves the other half of our actions, *or close to it*, for us to govern [*my italics*]".⁶⁸ It is fair to say that the reality of 'fortune'

⁶⁷ Parel, *The Machiavellian Cosmos*, p. 42.

⁶⁸ Cf. *Il Principe* 25: "Nondimanco, perché el nostro libero arbitrio non sia spento, iudico potere essere vero che la fortuna sia arbitra della metà delle azioni nostre, ma che etiam lei ne lasci governare l'altra metà, o presso, a noi." Online text available at <http://www.classicitaliani.it/machiav/mac14.htm#cap25> (last accessed 21 August 2012). This passage also referenced in Parel, *The Machiavellian Cosmos*, p. 58. Here, Machiavelli portrays

acquired particular importance in late medieval and Renaissance astrology, and this not only among critics like Oresme; indeed, astrologers of this period also tended to identify fortune as the ultimate source of a differentiation between happy and unhappy human fates and states.⁶⁹ Contrary to the prognosticators, however, Machiavelli was not so much interested in negotiating the reality of fortune, as in minimizing the impact of fortune on human action.⁷⁰ This is particularly clear in his advice for the prince, but Anthony Parel points up various other instances which confirm how Machiavelli set out from a problematic of *resistance against* the given phenomenon of change, and more specifically against corruption.⁷¹

On the whole, then, Machiavelli shows us a political theory in which the stability of a body politic, carved out by the relation between ruler and ruled, was central, and not so much the practicing of given relations which raised a problematic of passivity versus activity. Within this central goal, astrological knowledge became important relative to this stability, and not so much relative to the possibility of being an actor rather than a helpless being. Machiavelli's advice that the prince take in 'the spirit of the times', for instance, clearly recalls astrology:

I believe also that he will be successful who directs his actions according to the spirit of the times, and that he whose actions do not accord with the times will not be successful. Because men are seen, in affairs that lead to the end which every man has before him, namely, glory and riches, to get there by various methods; one with caution, another with haste; one by force, another by skill; one by patience, another by its opposite; and each one succeeds in reaching the goal by a different method. One can also see of two cautious men the one attain his end, the other fail; and similarly, two men by different observances are equally successful, the one being cautious, the other impetuous; all this arises from nothing else than whether or not they conform in their methods to the spirit of the times.

Moreover, there is good evidence that Machiavelli accorded particular importance to prophecy and prognostication within this overall framework. Like the prognosticators, Machiavelli was convinced that "nothing

the general problematic of 'being governed' by something, thus rejoining the fundamental theme of governmentality, as defined in Michel Foucault, *Sécurité, territoire, population. Cours au Collège de France (1977–78)* (Paris: Gallimard/Seuil, 2004).

⁶⁹ Cf. Steven Vanden Broecke, "The Stars, the Sublunary World, and the Social Body. The Specific Rationality of Early Renaissance Prognostications," forthcoming.

⁷⁰ On *fortuna* in Machiavelli's oeuvre, see Hanna Fenichel Pitkin, *Fortune is a Woman. Gender and Politics in the Thought of Niccolò Machiavelli* (Berkeley CA: University of California Press, 1994), pp. 138–69.

⁷¹ Parel, *The Machiavellian Cosmos*, pp. 35–6 and 48–9.

important ever happens in a city or a province that has not been foretold by diviners or by revelations or by prodigies or by other celestial signs".⁷² In an apparent anticipation of Thomas Malthus, he was also convinced that large-scale disasters were nature's way of purging "this mixed body of the human race" from overcrowding and malice, so that "becoming few and humble, men can live more comfortably and grow better".⁷³

Like the prognosticators, Machiavelli also displayed an even more pronounced tendency to section off a separate sphere of 'sublunary historicity' (marked by the phenomena of fortunate and unfortunate events) *within* the general framework of a universal story of divine governance, and tended to recuperate increasingly large chunks of God's actual presence within this sphere. Accordingly, God's presence increasingly became a matter of alterations to this basic 'natural story', and God increasingly appeared not so much as a prime mover, but as a kind of delegator.

Three Suggestions for Further Research

The examples of Oresme and Machiavelli allow us to make at least a few reasonable suggestions for further research into the general topic of political theory's relation to astrology. First of all, it is clear that astrology is best approached, not as a specific technical art, but rather as the spokesman of a given narrative in which human action is seeking to insert itself—a narrative whose relevance depends on the felicitous or infelicitous nature of such actions. Secondly, it is only when this actor is defined as a political actor, rather than as a human who happens to be called 'prince', that astrology will be replaced by newspapers, political almanacs, etc. as unveiling this given narrative. Thirdly, there is some evidence that the body politic was increasingly skeptical about the possibility of large-scale disaster. In his important lecture series at the *Collège de France* for the year 1977–8, for instance, Michel Foucault unearthed interesting evidence that 18th century philosophers increasingly considered it unlikely that a people could ever disappear from lack of food, and qualified even the possibility of famine as nothing more than a popular "chimera".⁷⁴

⁷² Ibid., pp. 38–9 (referencing *Discorsi* I.56).

⁷³ Ibid., p. 38 (referencing *Discorsi* II.5).

⁷⁴ Foucault, *Sécurité*, p. 40.

Renaissance Prognosticatory Culture: From the Social body to the Stability of the Body Politic

Our discussion of Oresme and Machiavelli already highlighted the importance to the advent of modern 'politics', of an interpretation of the ruler as one who is responsible for the stability of society as such (thus distancing 'the head' from the rest of the body politic). The ideal of such stability, moreover, was not disconnected from novel assumptions about the relation of the social body ('the people') to the cosmos. As early as Oresme, the desirability and possibility of somehow extracting the social body from such a cosmic situation begins to manifest itself. Taking our cue from the vibrant realm of Renaissance prognostication culture, we will now find out how, such ideals increasingly manifested and reinforced themselves throughout the 16th and 17th centuries.

The early Renaissance prognostication, I argued elsewhere, testifies to a new desire to organize an autonomous social body: ideally, the adoption of prognostications by each and every member of a social body could function as the key to exempting this social body as such from the cosmic play of influence, corruption, and death: that is, from its situation in the sublunary sphere.⁷⁵ The social body thereby became an essentially stable thing, only directly affected by change and historicity *through* the individual members (or groups thereof) of which it is made up. At least by the second half of the 15th century, this social body was essentially conceived as a secular community, rather than as the Catholic Church. Moreover, it also appears that a separate sphere of 'civil' or political history was being carved out, disconnected from 'nature', yet fashioning a sacred history of its own. This is particularly clear in the Renaissance prognostication's adoption of sections focusing on the particular—rather than universal—cosmic fates of rulers, nations, and cities.

Another early manifestation of this primacy of 'civil' history for a social body situated in the sublunary realm, and of the concomitant assumption of the body politic as a whole *under* the guidance of a head, is a late 15th century doubt among prognosticators whether rulers were really in the same 'cosmic boat' as the people after all. In his prognostication for 1500, the Italianate English court astrologer William Parron thus introduced his section on Pope Alexander VI as follows:

⁷⁵ Cf. Steven Vanden Broecke, "The Stars, the Sublunary World, and the Social Body."

Some wise (not to call them unwise) and adulating astrologers say that the stars have no influences in popes and emperors. If this is indeed so, then it follows that they are not natural; which is most false and either the greatest simplicity and stupidity or the greatest adulation, just as that most elegant Paul of Middelburg wrote in his booklet of prognostications for twenty coming years (...). Hence, I say that the stars operate in popes and emperors as they do in others; unless there would appear to be something divine and supernatural in them, since being born and dying is the natural work of God. They also bear sons, and hence work natural things.⁷⁶

Such phenomena may be taken as preludes to a fascinating double shift which marks prognosticatory culture of the 16th and 17th centuries. First of all, a stable 'body politic'⁷⁷ organized around a single ruler (indeed, which constituted the members *of* the head that was the ruler) increasingly detached itself from the cosmic embeddedness which still constituted the starting-point of early Renaissance prognostication. Secondly, prognosticators were increasingly expected to foretell the way in which the heavens constituted a source of danger for the ruler's activity of enabling and maintaining such stability. The traditional focus on the folies of embodiment was thereby exchanged for a novel focus on the mastering of misfortune.

Consider the traditional section on "war and peace" in the annual prognostication. This appears to have increasingly abandoned its traditional approach to war and peace as attributes of an entire social body; instead, they were approached as effects of the relations between a rarefied constellation of great princes.⁷⁸ Likewise, the discussion of the state of different socio-professional regions appears to have increasingly focused on celestial disturbances of an essential stability. Consider the following passage, taken from a prognostication for 1555 by the Maastricht physician Willem de Vriese:

Jupiter (...) will not be able to protect the spiritual state from the fury and anger of Mars and Saturn. Spiritual persons will suffer much adversity and contrariety. (...) In some countries, their prelates and greatest heads (...)

⁷⁶ William Parron, *De astrorum influxu anni presentis MD pronosticon libellus* (London: Richard Pynson, 24 December 1499), fols. A6v–A7r.

⁷⁷ On this metaphor in the Middle Ages, see Tilman Struve, *Die Entwicklung der organologischen Staatsauffassung im Mittelalter* (Stuttgart: Hiersemann, 1978).

⁷⁸ E.g. Cornelius Schuute, *Pronostication* (...) 1554, fol. A3v: "Ains par trahisons avecq laide de ses alliez est il [Lempereur Turc] enclin de prendre, occuper, & piler aulcunes villes & isles maritimes"; Cornelis Schuute, *Prognostication* (...) 1555 (Antwerp: 1555), fol. [A3v]: "Ne puis trouver par les constellations celestes, en quelconque quartier les ay considere, que la pais se fera entre les princes du quartier occidental Deurope".

will be deposed and chased away. (...) Some spiritual and religious men will flee their positions and habitations, not knowing of anyone who might persecute or threaten them, but through fear and despair (...) I do not know whether this will happen more through the malevolence of some bad people, or through their own fault. Thus it behooves the clergy to lead us in a good life and faithful teaching of the word of God.⁷⁹

Likewise, predictions of particular regions or cities increasingly included a discussion of the well-being of those administering rule in these locales, of the quality of their rule, and of the possibility of "treason".⁸⁰

Around the middle of the 16th century, the city-state still provided the basic framework for the manifestation of celestial influence. This changes by the end of the 16th century, when the central focal point of the prognosticator's productions increasingly turns towards the territorial nation and the prince. Richard Harvey's treatise on the much-debated Saturn-Jupiter conjunction of 1583, for instance, concluded that:

(...) it is vehemently to be feared, that in the East and Southeast cuntries, a desperate company of vile and villanous rascals shall flocke together, and seditiously, rebelliously, and traitorously arise in armes against their Princes and Magistrates: who (as a dogge hath a day, and a spider provision of ill favoured geere to serve his turne) shall for a time violently set upon, and vehemently afflict many.⁸¹

This is paralleled with a fascinating shift in the prognosticator's approach to the visible heavens as such: the latter were increasingly read as a direct, theatrical representation of the changing relations between specific actors in the theatre of sublunary politics. In his prognostication for

⁷⁹ Willem de Vriese, *Een vremde ende wonderlijke pronosticatie (...) MDLV* (Antwerp: Hans van Liesveldt II, 1555). BT890. Edited in: Hinke van Kampen, Herman Pleij, Bob Stumpel, Annelien Venmans & Paul Vriesema, *Het zal koud zijn in 't water als 't vriest. Zestiende-eeuwse parodieën op gedrukte jaarvoorspellingen* (The Hague: Martinus Nijhoff, 1980), pp. 203–8, passage taken from p. 205.

⁸⁰ E.g. Schuute, *Pronostication (...) 1554*, fols. A4r/v: "Ceulx aux quelz le gouvernement de la ville Danvers de par lempereur comme duc de Brabant sera commiz, se porteront moult sagement en l'administration de la ville, proposans par deliberation des choses fort prouffitables a la communaulte (...). Du payz de Liege. Ce payz sera moult heurieux en vins, bledz & fruitz. Tellement que plusieurs sen asbahiront de la grande multitude. Sera aussy par le tresreverent pere en Dieu George daustre evesque de liege, et par ses commiz a l'administration de iustice fort bien, & trespourveuement gouverne. Ce toutesfoiz non obstant aura y des coeurs simulez & traistres couvertz. Lesquelz ne scaura on bonnement aperchevoir, sil nest par tresaspre subtilite, et continuele crainte de trahison a venir".

⁸¹ Richard Harvey, *An Astrological Discourse vpon the great and notable Coniunction of (...) Satvrne & Iupiter (...) the 28 day of April, 1583* (London: Henry Bynnmann, 1583), p. 19.

1594, the Brussels physician Ian Franco thus made the following comment on the solar eclipse of May 30, 1593:

In the previous solar eclipse, Mercury stands as dispositor, moving through the aforementioned Royal house. (...) Since he is free of all malevolent planets, especially Mars and Saturn, he will—as the wisdom of Council—ameliorate many (...) conflicts between countries (*landen*). Through several mercurially speaking (...) ambassadors, he will help to change (...) war into peace, and discord into love (...). May the Lord almighty grant us this, and may he tire of hitting us so bitterly.⁸²

Similarly, Franco's prognostication for 1613 was filled with passages like this one, made on the occasion of the chart for the new moon of 14 September:

The gentle and benevolent Jupiter comes forth, and prefers to keep living in exaltation in Cancer. He seeks to promote the Holy Church and her servants more and more, as Cancer—the Dutch lobster—does too, in preferring to follow the footsteps of Jupiter than to be ruled by Mars, which inhabits neither its own domicile Aries, nor its exaltation.⁸³

If the case of astrology's "halcyon days" during the English Civil War is anything to go by, this metaphorization of the heavens (as the theatrical representation of a sublunary narrative of 'political history') became increasingly important in the 17th century. In England, political predictions diminished considerably in the second half of the 16th century, and "by the early seventeenth century, many almanac-makers were omitting political speculations altogether, from principle as well as prudence".⁸⁴

Of these two, principle appears to have been the strongest—despite the popular image of the sycophantic astrologer. Beginning in the late 16th century, it becomes fairly easy to detect a triple movement in which astrological knowledge was increasingly treated as a necessity, and as a source of protection against misfortune, relative to a given relation to the stars. The dedicatory letter of William Bourne's prognostication for the period 1581–1590, for instance, emphasized how this was written "for the use of Seamen, for that they are oftentimes foorth a yeere or two, so that it is

⁸² Ian Franco, *Ephemeris metheorologica* (Antwerp: Arnout Coninx, 1594).

⁸³ Ian Franco Jr., *Ephemeris metheorologica* (Antwerp: Arnout 's Coninx, 1613), fol. B5v: "De saechtmoedighe ende goedertiere Jupiter gaet voorts, ende wilt noch met syne exaltatie in Cancer blijven woonen, ende begeirt de H. Kercke meer endde meer te vervoorden met hare dienaren, van gelijcken doet ooc Cancer, den Hollantschen creft, die liver de voetsteppen van Jupiter begeirt te volgen, dan van Mars gheregeert te worden, die noch in Aries syn eyghen huys ende exaltatie woonachtich is".

⁸⁴ Capp, *Astrology*, p. 70.

necessary that they should have Almanackes for longer time then one yeere". Likewise, the reader was assured by Bourne that "it is very necessary, to have an Almanacke for divers necessary purposes".⁸⁵

Readers were warned against their own curiosity and credulity in relation to such predictions, and this in the name of the transcendence of God (credited as the only true author of history and change) with respect to the astrologer's historical experience of celestial influence.

The sublunary theatre of political affairs was positively exempted from this relation to the stars. Jonathan Dove's prognostication for 1634, for instance, went to some length to explain how it was possible "that the change of the weather may be known before it come" by inspecting the visible stars, but added a severe reprimand as to the credibility of "the disturbances of Starres, the translation of kingdomes, together with the successe of such and such warres, the telling of fortunes, the finding of things lost and the like, should be known by the starres? It cannot be that their operations manifest any such predictions". Such things, Dove emphasized, could only have celestial origins in "extraordinarie appearances, as Comets".⁸⁶

When politics re-entered the English prognostication at the outbreak of the Civil War, it did so in a way that was not entirely at variance with these earlier changes. First of all, the aforementioned sense of a separate 'civil' or political history had now become primary, and this in at least two ways. On the one hand, the prognostication increasingly came to include representational *tableaux* of current rulers, references to recent *histoire bataille*, as well as world histories with a focus on political history. On the other hand, even prognosticators now willingly adopted astrological language to voice threats to a political *status quo*. A fine example of the latter occurs in the preface to the *Mercurius coelicus* of John Booker:

Shall I tell you what I thinke of that *Great Conjunction* you speak of, which was at *Westminster* the third of *November* 1640. The which God be blessed continues yet; though some *Stars* of the first *Magnitude* have fallen since, & others have proven Errant indeed, yea, & though the Terrestriall *Moon* hath Eclipsed our *Sun*, for as Sol est Rex Planetarum, so Rex est Sol Parliamenti) & other *Stars*, *Stellae peregrinae*, *nebulosae* have mixed their Beams, & deprived us of the sweet & ordinary *Benefit* we use to receive by His

⁸⁵ William Bourne, *An Almanacke and Prognostication for x yeeres* (London: Richard Watkins & James Roberts, 1581), fols. A3r, A4r.

⁸⁶ Jonathan Dove, *An Almanack for the yeare (...) 1634* (Cambridge: Printers to the University of Cambridge, 1634), fols. C3r/v.

presence: yet it will check your Opposition at *Oxford*, that I hope the Kingdome shall not be hurt one jot by the Malignant Influence thereof; I mean your Anti-Parliament there, will prove a meer Meteor, an *Ignis Fatuus*, *A nothing*. And though you may there force Votes to Murther the Kings Liege People; Commit Perjuries, Prophane the Sabbath, Assemble all the false *Priets*, *Papists*, *Atheists*, and *Iesuites*, in the Kingdome, Keep the King from comming to His Parliament.⁸⁷

Secondly, the re-use of astrological language as a metaphor for political dynamics, easily merged into a conception of the visible heavens as an ever-changing representation of the oppositions and challenges which a legitimate political authority faced. Accordingly, such challengers were presented as merely 'under the influence', while true political order was spoken of as the manifestation of a divine presence and 'blessing'. Consider the following example, also randomly culled from Booker's *Mercurius coelicus*: "As likewise that other *Conjunction* of *Saturne* and *Mars* in the end of *May* [1642], where I used these words, *Circa hoc Tempus Bellica Stratagemata audientur*; Just at that time when Hull was sorely threatned; but (blessed be God) it is yet, and I hope will be kept out of the Enemies possession".⁸⁸

Thirdly, prognosticators like Booker also began to emphasize a problematic of popular astrological credulity in relation to politics. Attacking Wharton's pseudonymous prognostication for 1644, Booker began by addressing "all the People" in their guise of prognostication consumers, and specifically warning them for Wharton's "Chronology of the most remarkable Occurrences since the beginning of this Rebellion". This section of Wharton's prognostication, Booker claimed, was partisan propaganda dressing up as truth-speech.⁸⁹ Wharton thereby became a "counterfeit" pamphletist, operating from schismatic places with respect to "the Kingdom" ("Oxford"), allied with overseas atheists and papists, and ultimately seeking to "destroy the *King* and *Parliament*, subvert our *Religion*, *Lawes*, and *Liberties*; To bring in *Tyranny*, *Slavery*, *Popery*, and all the misery that ever this Nation suffered".⁹⁰ The aforementioned primacy of political history turned the prognostication into a potential tool of seduction for those who sought to recruit the people into subverting a political *status quo*.

⁸⁷ John Booker, *Mercurius coelicus, sive Almanack et Prognosticon (...) 1645* (London: Company of Stationers, 1644), p. 5.

⁸⁸ *Ibid.*, p. 2.

⁸⁹ *Ibid.*, p. A1v.

⁹⁰ *Ibid.*, p. A2r.

Finally, Booker also manifests a novel meaningfulness of political action in relation to the heavens. On the one hand, the celestial theatre was increasingly read as a source of hope and good tidings for the legitimate political authority. On the other hand, prognosticators also began to stipulate the necessity of sublunary political action as a condition of possibility for the manifestation and incarnation of celestial occasions for good fortune. Booker, for instance, stated: "Yet I trust that *conjunction* which was in *November* at *Westminster*, co operating with that other of *February*, will worke a Through Reformation indeed, throughout this Realme, by a timely *purging* it, of all *Atheists*, *Papists*, *Iesuites*, *Bloody Irish Rebels*, and others, the enemies of God, and true Religion".⁹¹

*The Politicization of the Credibility of Astrology and the Astrologer:
From Celestial Influence to Astrological Influence
in the 16th and 17th Centuries*

Until the Renaissance, it was habitual for astrological critiques to concern themselves largely with the detrimental effects of astrology's credibility on the privileging and practicing of the self's truth. Since the 4th century, extant critiques were usually based on the Christian assumption of a radical tension between man's relation to the Creator on the one hand, and to other creatures on the other. Against this background, criticism of astrology concerned the reasonableness of taking the visible heavens as the practical reference-point for organizing a practice of care for the self. As early as Augustine's *City of God*, such criticism still started out from the Greco-Roman assumption of a given and strictly particular life narrative, but ceased to uphold the question whether such a narrative was shaped by the self's relation to the stars as the fundamental issue. Certainly, Augustine's *City of God* borrowed extensively from Greco-Roman critiques of astrology, but such borrowing appears to have had a rhetorical function. It did not so much seek to cure an audience of possession by what Cicero called *superstitio*, but rather sought to make it available for the truth by undermining the attractiveness and credibility of—diabolical—deception.

The novel fundamental issues of Christian astrological criticism were instead set out in the very first chapter of Augustine's critique (*City of God* V.1), which appears to have broken with the Greco-Roman focus on

⁹¹ Ibid., p. 5.

passivity and the possibility of activity. Instead, Augustine's critique privileged a focus on divine permission of the manifestation of evil inside His universal narrative on the one hand, and the very possibility for the self to positively enter this narrative on the other.⁹² Although initially focusing on the suggestion that evil deeds were somehow caused by the stars—or God—, the end of *City of God* V.1 in fact shows that for Augustine, it was the very possibility of foretelling evil deeds, and the attendant suggestion that those engaging in them were somehow helpless and determined, which constituted the problem with astrology. This also shows how astrology was not so much approached by Augustine as the spokesman of the self's given relation to the stars, but rather of the self's given relation to a personal narrative. It was the problem of the presence of evil which appears to have rendered this last relation problematic.

The Dangers of Astrological Influence in Late Renaissance Astrological Critiques

Interestingly, man's relation to evil remained a focus of astrological critiques in the Renaissance and 17th century. This, I would submit, testifies to the ongoing relevance of a relation to the God of Israel for such early modern discourses. At the same time, however, one notices a new politicization of such critiques. By the second half of the 16th century, we have clear indications that astrological practice itself was increasingly becoming politicized, and this in the sense that a discourse developed in which not only the meaningfulness, but also the dangers of astrological predictions, were increasingly considered to be relative to the stability of the body politic.

This change came with two important, but rarely acknowledged, ulterior shifts. First of all, rejections of the credibility of astrology were not so much about the existence of a privileged relation between the embodied self and the visible heavens (i.e., about 'celestial influence') anymore; nor was there much concern over the relation between taking the stars as a guide to life and the project of incarnating the divine will. Instead, 'the problem with astrology' was increasingly perceived and discussed as a social problem, in which excessive 'popular credulity' might have deleterious effects on socio-political order. In his *Discours sur l'astrologie* (1640),

⁹² For a penetrating analysis of this tension between evil and love, which finds love in the acceptance of the other's relation to evil, see Michel de Certeau, *L'étranger ou l'union dans la différence* (Paris: Seuil, 2005), pp. 21–33.

addressed to Richelieu, the famous Oratorian general Charles de Condren (1588–1641) thus associated astrology with fatalism and determinism. This typically Christian association went back at least to Augustine's *City of God*.⁹³ Contrary to Augustine, however, Condren's concern was not so much about the meaningfulness of religious gestures addressing the God of Israel, but rather about the consequences of a generalized credibility of such deterministic *opinions* for the stability of the body politic: "(...) attributing to the stars, in any way whatsoever, a direct influence on the liberty of men, (...) is an intolerable error which destroys Religion, and even all civil order [*police*]; which takes away merit from the just; which renders the Stars guilty of crimes; and which condemns the Laws decreeing punishment for criminals, since only the Stars are really guilty".⁹⁴

Secondly, astrology was no longer approached as a metaphorical language which represented the self's passions and embodiment, but without offering spiritual mediation with God (the latter traditionally codified in the notion of a 'superstitious astrology'). Instead, critiques of the first half of the 17th century often began by firmly distinguishing (legitimate) 'astrology' from an illicit *simulacrum*, which was variably referred to as 'astromancy' or 'judicial astrology'.⁹⁵ The latter was then identified as completely empty and *powerless* to predict the kinds of things she set out to predict (since such things were *in no way* ruled by the stars), and as *positively* detrimental to both socio-political order and the human attainment of salvation.

Condren's aforementioned *Discours* thus emphasized "the difference between believing and knowing [*croire & sçauoir*]": "astromancy" was firmly situated on the former side, but "astrology" (despite its contamination by "the remains of the Idolatry of the Pagans") on the latter. The problem for

⁹³ For a slightly fuller exploration of this, see Steven Vanden Broecke, "Consolations of astrology. The stars, apocalypticism, and theology at Louvain University, 1521", forthcoming.

⁹⁴ Charles de Condren, *Discours et lettres* (Paris: Sébastien Hure, 1648), p. 228.

⁹⁵ Cf. P.J.S. Whitmore, *A Seventeenth-Century Exposure of Superstition: Select Texts of Claude Pithoys (1587–1676)* (The Hague: Martinus Nijhoff, 1972), p. 70: "Mon dessein n'est pas d'attaquer l'Astrologie, que chacun sçait estre vne des plus nobles sciences, & extremement necessaire à l'art militaire, à l'agriculture, & sur tout à la nauigation: mais vne certaine inuention diabolique qu'on appelle faussement *Astrologie iudiciaire*, & que nous appellerons plus proprement *Astromantie*; puis que fondée sur vn tas d'observations vaines, elle entreprend de deuiner les choses futures, qui dependent purement de la libre volonté de Dieu & des hommes".

Condren lay in the possibility of “believing superstitiously” in astrology, “as in true practices of Religion”.⁹⁶

As for true astrology, authors like Condren also displayed a new approach to the visible celestial bodies as fairly autonomous causes of sublunary evils; they were now not so much taken as signs of a fundamental human helplessness which could be overcome by adopting astrology, but rather as sources of loss to the domain of one’s proper “affairs”. Invoking the famous Sistine Bull concerning astrology of 1586, however, Condren simultaneously limited the domains in which the visible stars could inflict considerable loss at all:

(...) for one may reasonably fear the heat of the Sun when it is near, and the coldness of the weather when it is far removed, the evil aspects of Saturn and Mars which can trouble the air and render it incommodious, the constellations which excite tempests at sea, and those which bring damage to crops. One can also use foresight to prevent the evil which these can cause. The Index of the Council of Trent permits the use of astrology for this, for sea voyages, and for agriculture.⁹⁷

Very similar sounds could be overheard in the extensive *Traitté curieux de l’astrologie iudiciaire, ou preservatif contre l’astromantie des genethliaques* (1641) of the French Protestant Claude Pithoys. A few basic elements of the Augustinian critique remained foundational to Pithoys’s discourse: a concern with *curiositas* as the motor driving human engagement with astrology, and a concern with this deceptive astrology as the practice of a relation to the Devil, rather than to God.⁹⁸ Beyond this, however, it is especially the differences which are notable. First of all, Pithoys’s discourse approached ‘astromancy’ as a tool of diabolical seduction, by which to lead man away from a relation to God, and hence to introduce human error into this relation. This is very different from what was the case in Augustine, who was not so much concerned with establishing the religious

⁹⁶ Condren, *Discours et lettres*, pp. 220–3.

⁹⁷ Condren, *Discours et lettres*, p. 196. On the 1586 Sistine Bull, see: Germana Ernst, “Astrology, Religion and Politics in Counter-Reformation Rome” in: *Science, Culture and Popular Belief in Renaissance Europe*, ed. Stephen Pumfrey (Manchester: Manchester U.P., 1991), pp. 249–73; Ugo Baldini, “The Roman Inquisition’s Condemnation of Astrology: Antecedents, Reasons, and Consequences” in: *Church, Censorship, and Culture in Early Modern Italy*, ed. G. Fragnito (Cambridge: Cambridge U.P., 2001), pp. 79–110; Barbara Mahlmann-Bauer, “Die Bulle *contra astrologiam iudiciariam* von Sixtus V., das astrologische Schrifttum protestantischer Autoren und die Astrologiekritik der Jesuiten. Thesen über einem vermuteten Zusammenhang” in: *Zukunftsvoraussagen in der Renaissance*, eds. K. Bergdolt & W. Ludwig (Wiesbaden, 2005), pp. 143–222.

⁹⁸ On curiosity, see Whitmore, *A Seventeenth-Century Exposure*, pp. 72–3.

legitimacy of specific practices, as with establishing whether astrology was a way of practicing the relation to God, or not, *at all*. In other words, while Augustine was basically concerned with the question of which relation was privileged in the practice of astrology (that to God, or to the Devil), Pithoys was concerned with the way in which the practice of astrology led one away from this privileged relation, on what he termed a “sliding slope”.⁹⁹ The Devil’s primary goal was now to lead the self away from right relations to the God of Israel, not so much to be called and worshipped as ‘God’ by the self.

Secondly, and following on from the first point, Pithoys’s discourse exhibits a novel focus on the human engagement of astromancy as a *positive source* of misfortune. Having considered traditional judgments of astrology and the character of its doxographical lineage, Pithoys’s second chapter especially singled out the perniciousness of “astromancy” to the public. Through it, Pithoys claimed, the “infernal Fury” sought to inflict “mortal wounds” to “the States, whether the civil government or [the State of] religion”.¹⁰⁰ Such wounds, it soon turned out, were essentially two-fold: those produced by the credibility of the astrologer as fortune-teller on the one hand, and those of astrology as a theory of human action on the other.

Concerning the first aspect, Pithoys essentially provided a catalogue of the human evils and suffering which astrologers could inflict on the body politic.¹⁰¹ As for the second aspect, Pithoys claimed that the credibility of astromancy implied an authorizing of crime. More specifically, criminal events could no longer be said to be the manifestation of an evil will, but simply of a celestial fatality, operating with a violence that could not be resisted: “From astromancy is thus born fatality, and from fatality the impunity of crimes, and from the impunity of crimes the insolence of criminals, and the toppling of laws; and from the toppling of laws, what can one hope for, if not the toppling of States and the ruin of peoples?”¹⁰²

In a very real sense, then, Pithoys’s discourse marks a novel sectioning off of concerns over corporeal, temporal, and social misfortune, rather than spiritual misfortune (such as the death of the soul). Significantly, even ecclesiastical authority was now primarily approached from the

⁹⁹ Whitmore, *A Seventeenth-Century Exposure*, p. 69.

¹⁰⁰ *Ibid.*, pp. 100–4.

¹⁰¹ *Ibid.*, pp. 104–7.

¹⁰² *Ibid.*, p. 109.

angle of the possibility of creating and maintaining order in sublunary socio-political bodies:

And who does not see that this demonic invention always makes the strongest effort to strike the foundations of the Christian religion and topple the maxims of theology by attributing to itself a knowledge which belongs to God only, and by establishing a fatality which ruins the freedom of man and the providence of God, and which consequentially authorise crimes, destroys all laws, takes away every sentiment and practice of religion, topples all States, and brings all nations into horrid disorder? Then tell us once again that there is no reason to cry out loud that this astromancy is an invention of demons, and most pernicious among all magical inventions".¹⁰³

What to do about all this? At the end of his long investigation, Pithoys considered it exceedingly just that "the books of judicial Astrology should be burned, and the Genethliacists banned from all Christian States".¹⁰⁴ As an alternative, he provided an inventory of "phenomena" from which "every Christian can cast his horoscope, and foresee what God's providence has in store for him, and not from the mute and unfeeling stars, which have no force whatsoever over events which depend on human liberty and this divine providence".¹⁰⁵

Such concerns were still vibrant in the 1660s, when the physician Jean-Baptiste Denis could still claim that:

All the Fathers who discussed [judicial astrology], especially sought to inspire Christian Princes with the zeal to apply themselves (...) to banish from their States these miserable impostors, who—by a base and ill-founded vanity—only serve to throw fear (*épouvante*) in weak spirits, to trouble the public peace, and to amuse the people with vain and superstitious expectations.¹⁰⁶

Nevertheless, something was once again changing below the surface. Consider the following passage from the dedicatory letter of *Le tombeau de l'astrologie judiciaire* (1660) by Father Jacques de Billy, SJ, could still claim that:

He who demolishes a temple by force, is just as profane as when he should do so by fire. He who topples a State by conniving with foreigners, sins no less than when he does so through sedition of the inhabitants. The murderer who takes a man's life with a rope, is just as criminal as when he does so by

¹⁰³ Ibid., p. 110.

¹⁰⁴ Ibid., p. 206.

¹⁰⁵ Ibid., p. 229.

¹⁰⁶ Jean-Baptiste Denis, *Discours sur l'astrologie judiciaire et sur les horoscopes* (Paris: Jean Cusson, 1668), p. 11.

poisoning. From this, one may conclude that the Genethliacists and followers of Jansenius are just as dangerous, since they produce the same effect: to ruin free will.¹⁰⁷

But notice the way in which Billy now portrays the figure of the astro-mancer as an outside presence, and how the inside is now defined by a theological 'right doctrine'. Clearly, Billy represents a generation which had learned to privilege State over Church, and to interpret the State as a positive protector of a doctrine which was increasingly functioning as a shared 'morality', relative to the stability of the body politic. As we will now see, the age of Louis XIV would also begin to turn such assumptions into law.

The Dangers of Astrological Influence in Civil Ordinances

Politicization of astrological discourse is also apparent in the new phenomenon of civil ordinances seeking to curtail the negative political and social effects of the credibility of astrological discourse. In England, royal action came relatively early and forcefully. In 1568–9, Elizabeth I issued measures against:

(...) bookes (...) repugnant to truth derogatory to the Souuerayn estate of her Maieste and styrring and nourishing sedition in this Realm, ar comunly in secret sort here dispersed by malicious persons amonges sundry her Maiestes subiectes, to thintent to draw them to errour and withdrawe them sediciously from their dueties and allegiance due to her Maieste as their only Souuerayn.¹⁰⁸

Although not explicitly mentioning prognostications, the sudden drop in the number of licensed prognostications for 1569, and concomitant appearance of prior authorization by the Archbishop of Canterbury (as required in the Elizabethan proclamation), both suggest that this genre was credited with the potential to disturb the stable relations between ruler and subjects from without.¹⁰⁹ At the same time, however, a different manner of supervising prognostication production was developed through

¹⁰⁷ Jacques de Billy, *Le tombeau de l'astrologie iudiciaire* (Paris: Michel Soly, 1660), pp. a3r/v.

¹⁰⁸ Washington D.C., Folger Library, X.d.85: *Proclamation of Elizabeth I Against Seditious Books*. Online at http://www.folger.edu/html/folger_institute/sacred/Xd85forpdf.PDF (last accessed 25 July 2012).

¹⁰⁹ Cf. Eustace F. Bosanquet, *English Printed Almanacks and Prognostications. A Bibliographical History to the Year 1600* (London: 1917), pp. 41–2.

the London Stationers' Company, whose members Richard Watkins and James Roberts jointly held a monopoly on the printing of such texts.¹¹⁰

In the heavily decentralized Low Countries, preventive inspection by local city magistrates was not uncommon throughout the 16th and 17th centuries.¹¹¹ In 1618, the Estates-General of the Republic also issued measures against seditious books.¹¹² Likewise, German cities frequently instituted prior inspection by the city magistrate of prognostications.¹¹³

In early modern France, royal edicts pertaining to astrology were issued in 1560, 1579, 1628, and 1682.¹¹⁴ The 1560 edict of Orléans explicitly invoked "God's explicit commandment" and the desire of "Christian princes" to make sure that a social body does not go against such commands; on this basis, a new obligation to have "almanachs and prognostications" checked by "archbishops and bishops" before publication was now instated, so that "the limits of astrology" would not be transgressed.¹¹⁵ Compared to this, the 1579 edict of Blois already showed a shifting focus from the astrological production to the astrologer "exceeding the limits of licit astrology", adding the requirement to obtain royal permission to be printed, on top of ecclesiastical visitation, for the printers.¹¹⁶

Against this background, the 1628 edict of La Rochelle is fascinating for several reasons: (1) It targets the predictions, rather than the almanachs and prognostications as such; (2) It no longer relies on a system of ecclesiastical and/or royal visitation of these print productions, but on the responsibility and interest of astrologers; (3) It no longer invokes the people's relation to a divine will, but rather a concern for the tranquility of *royal* subjects and the stability of the body politic. In this edict, Louis XIII expressed his concern that almanach makers should produce things "which can only be good for troubling feeble spirits which give credence to them", forbidding the making of almanachs "beyond the limits of licit astrology, as well as the inclusion of predictions concerning states and

¹¹⁰ Cyprian Blagden, *The Stationers' Company. A History, 1403–1959* (London: George Allen & Unwin, 1960), p. 63.

¹¹¹ Jeroen Salman, *Populair Drukkerwerk in de Gouden Eeuw. De almanak als handelswaar en lectuur* (Leiden, Leiden University, 1997), esp. pp. 50 and 214n121 for the Spanish Netherlands.

¹¹² Salman, *Populair drukwerk*, pp. 95, 150, 169.

¹¹³ *Ibid.*, pp. 214–5.

¹¹⁴ Cf. Drevillon, *Lire et écrire*, pp. 94 sqq.

¹¹⁵ *Recueil général des anciennes lois françaises, depuis l'an 420 jusqu'à la Révolution de 1789*, eds. A.-J.-L. Jourdan, François-André Isambert, & Alphonse Honoré Taillandier, 29 vols. (Paris: Belin-Leprieux, 1821–33), 1821), vol. 14.1, p. 71.

¹¹⁶ *Ibid.*, vol. 14.2, pp. 390–1.

personae, public and particular affairs, and this either in express or covert and general terms".¹¹⁷ For the time being, however, astrology remained licit in itself.

This was different by 1682, when a royal edict of Louis XIV, issued at Versailles, returned to the old figure of the astrologer-diviner to portray him as a positive source of criminal acts and social unrest in the body politic.¹¹⁸ In the *Edit pour la punition des empoisonneurs devins et autres* (July 1682), Louis XIV revealed a somewhat surprising conception of the figure of the diviner. This figure was neither the source of false religion nor of false knowledge, but rather of maleficence and poisonings inside a social body. According to the text of the edict, this happened in a gradual deepening of the intimacies between the diviner and the 'credulous', starting out from "vain curiosities", over "superstitions", to "impieties and sacrilege", and finally maleficence and poison so as to realize evil desires or predictions.

Conclusion

In the introduction to this chapter, I announced my intention to do three things: (1) to survey the existing methodological avenues towards studying the relation between astrology and politics in the Renaissance; (2) to present some of the main results that were reached by following these routes; (3) to point up a few understudied phenomena in the relation between astrology and politics in this period.

At the end of this exercise, one cannot help but emphasize the importance of the last of these three aspects, and this for at least one reason: historians of astrology venturing into the topic of past politics have, for the most part, firmly embraced the venerable old *histoire bataille* approach.¹¹⁹ Although acknowledging the vast institutional differences which characterized politics in the past, these historians have largely assumed that the core assumptions, goals, and motivations of political action were roughly

¹¹⁷ Ibid., vol. 16, pp. 215–6.

¹¹⁸ Ibid., vol. 19, pp. 396–401.

¹¹⁹ On this term as central to traditional political history, see Nicolas Offenstadt, "Histoire-bataille" in: *Historiographies, I. Concepts et débats*, eds. Christian Delacroix et al. (Paris: Gallimard, 2010), pp. 162–9. For a recent methodological survey questioning the easy commensurability between political phenomena in different epochs and/or regions, see *Axes et méthodes de l'histoire politique*, eds. S. Berstein & P. Milza (Paris: Presses Universitaires de France, 1998).

the same in the past as they are (held to be) in the present. Central to this, it is tacitly assumed, was the acquisition and distribution of power, and the maintaining of social and political order. Astrology, it is then assumed, impinged on politics to the extent that it was held to profitably serve these goals.

Such an interpretation of political action not only sits uneasily with what we actually encounter in discourses on rulership or tyranny from the Renaissance or before. As we have found by exploring the cases of Oresme and Machiavelli, it also assumes a clear-cut distinction between 'nature' and 'society' which was quite simply absent in early Renaissance political discourse, and which—if the evidence of late Renaissance astrological critiques is anything to go by—was only gradually invented in the 17th century.

The study of (past) astrology and politics thus remains uncharted territory if one wishes to truly historicize this relationship. This would involve taking seriously the numerous indications that religious and spiritual motivations were dominant in political action until at least the 17th century; that astrology provided a particularly widespread language with which to represent the concern with embodiment that was so typical of Christian spiritual enterprises; and that the story of early modern astrology is also the story of a steady politicization of its relevance and dangers. This politicization, I would suggest, was itself a manifestation of the broader fashioning of a more presentist definition of politics, in which astrology became—at best—a tool with which to protect a society's economic infrastructure serving the life of the body (as in the Sistine Bull of 1586), or with which to protect the stability of the body politic (as in prognosticatory culture from the middle of the 16th century onwards). In doing so, astrology increasingly ceased being a metaphor by which to represent embodiment, and through which to distance folly.

CHAPTER SEVEN

ASTROLOGY AND SCIENCE

Brendan Dooley

From the standpoint of many thinkers in the Renaissance, astrology was not just ideology: it was science.¹ It comprised a body of knowledge that fit the criteria of verification commonly accepted for confirming information and establishing certitude about the natural world. It derived from authoritative traditions rooted in admired ages and places, illuminated by ancient wisdom. The most respected intellects had set great store by it from time immemorial. It made sense according to prevailing ideas about how the world and human nature worked. Its language was embedded in the very discourse whereby the results of scientific investigations were expressed. It seemed to conform to observations and experiences accumulated over time. Its methods were the methods of all knowledge-gathering; one could say, it corresponded to the cognitive “style” of the time. It used an experiential, not an experimental approach; and as such it belonged to Renaissance science and only partly to ours.² And to the extent that Renaissance thinkers began to invent modes of knowledge-testing to

¹ An early version of this chapter is in L. Greenfeld, ed., *The Ideals of Joseph Ben-David* (New Brunswick: Transaction Books, 2012), 29–43. Comparing magic, see Cesare Vasoli, Introduction to *Magia e scienza nella civiltà umanistica* (Bologna: Il Mulino, 1976). On astrology and science, see the special issue, edited by Lauren Kassell, of *Studies in History and Philosophy of Biological and Biomedical Sciences*, vol. 41 (2010). In addition, Eugenio Garin, *Astrology in the Renaissance: The Zodiac of Life* (Boston: Routledge, 1983, Italian original Laterza 1976); Patrick Curry, ed., *Astrology Science and Society: Historical Essays* (Wolfeboro, N.H.: Boydell Press, 1987); Idem, *Prophecy and Power: Astrology in Early Modern England* (Princeton, N.J.: Princeton University Press, 1989); Paola Zambelli, ed., *“Astrologi hallucinati”: Stars and the End of the World in Luther’s Time* (New York: W. de Gruyter, 1986); Idem, *The “Speculum Astronomiae” and its Enigma: Astrology, Theology, and Science in Albertus Magnus and his Contemporaries* (Boston: Kluwer Academic, 1992); Idem, *L’apprendista stregone: astrologia, cabala e arte lulliana in Pico della Mirandola e seguaci* (Venice: Marsilio, 1995); and for the relation to other knowledge, her *L’ambigua natura della magia: filosofi streghe, riti nel Rinascimento* (Venice: 1996), chap. 9.

² For the notion of cognitive “styles” I am indebted to Alistair Crombie, *Styles of Scientific Thinking in the European Tradition: The History of Argument and Explanation Especially in the Mathematical and Biomedical Sciences and Arts* (London: Duckworth, 1994); on which, also Chunglin Kwa, *Styles of Knowing: A New History of Science from Ancient Times to the Present* (Pittsburgh: University of Pittsburgh Press, 2011).

which it could not conform, it gradually lost its grip on Renaissance minds and was superseded by other approaches.³ To the familiar affirmation that Cancer was a feminine sign because it was related to water and that Leo was a masculine sign because it was related to fire, Giorgio Raguseo (d. 1622), summarizing the perplexity of many, responded, "this is certainly no mathematical demonstration, in which an unknown is being proven by an unknown."⁴

Thus the story of astrology and science in the Renaissance is largely the story of science in general. No wonder Giovanni Battista Riccioli included both astrologers and astronomers together in the list he compiled at the end of the 17th century of experts on celestial matters from ancient to modern.⁵ And no wonder that, well into the 17th century and beyond, it kept its position among the studies associated with "mixed mathematics" as taught in the medical schools. And the works and days of its practitioners deserve all the attention that, for instance, the *Cambridge History of Early Modern Science*, or indeed the *Cambridge History of Renaissance Philosophy* have devoted to them. To these anthologies we also refer for a fuller discussion of the problematic term "science" in this context, adding only that for the sake of convenience "science" and "natural knowledge" will be used interchangeably in deference to historical usage when referring to our period, and clear indications will be given when anything specifically relating to the notion of "modern science" is in play.⁶

To understand the full implications of the theme of astrology and science, therefore, is to understand a basic episode in the formation of humanity's outlook on nature, and perhaps, to throw more light on the

³ Concerning the waning of astrology note H. Darrell Rutkin, "Astrology," in Katharine Park and Lorraine Daston, eds., *The Cambridge History of Science*, vol. 3: *Early Modern Science* (Cambridge: Cambridge University Press, 2008), pp. 542–63; interesting reflections in Ornella Pompeo Faracovi, *Scritto negli astri: l'astrologia nella cultura dell'Occidente* (Venice: Marsilio, 1996), pp. 235–280.

⁴ Giorgio Raguseo, *Epistolarum mathematicarum seu De diuinatione: libri duo* (Paris: 1623), p. 94.

⁵ Concerning histories of science in the Early Modern period, the special issue edited by Robert Goulding of *Journal of the History of Ideas* 67 no. 1 (2006).

⁶ Consider Katharine Park and Lorraine Daston, "The Age of the New," in *The Cambridge History of Science*, vol. 3: *Early Modern Science*, pp. 1–30, as well as the articles by William A. Wallace, Alfonso Ingegno and Brian P. Copenhaver in Charles B. Schmitt, Quentin Skinner, Eckhard Kessler and Jill Kraye, eds., *The Cambridge History of Renaissance Philosophy* (Cambridge: Cambridge University Press, 1988). In addition, on the term "science," Peter Dear, "What is History of Science the History Of? Early Modern Roots of the Ideology of Modern Science," *Isis* 96 (2005): 390–406. Important reflections also in Brian P. Copenhaver, "Did Science Have a Renaissance?" *Isis* 83 (1992): 387–407.

complex pedigree of a category of experience, “science,” that since the Renaissance has loomed ever larger in human life. Before proceeding to a more general exploration, we will take three well-known and deeply contrasting interpreters of natural knowledge to epitomize the relations between astrology and science in the Renaissance. For our purposes, Girolamo Cardano exemplifies how astrology was bound up with other natural knowledge, Francis Bacon shows how other knowledges could lead to innovations in astrology, and Johannes Kepler shows how astrology could lead to innovations in other branches of natural knowledge. All three were highly controversial when they wrote and their writings subsequently spawned intense debates among scholars attempting to appraise their contributions. We will mention rather than engage fully with the scholarship on each one, as we focus on the aspects of their work that elucidate our topic.

Three Examples of the Relation between Science and Astrology

Girolamo Cardano wrote, according to his own last count in 1575, nearly a hundred books on almost every field of scholarly endeavor in his time (*On Water, On Dialectics, On the Studies of Socrates, On Civil Prudence, In Praise of Nero*, are some of the lesser known), although he is remembered in science history textbooks mainly for contributions to algebra, game theory, and machine construction. Most recently attention has been drawn to his voluminous medical works, which summarized theory and practice in an age to some degree torn between Galen and Hippocrates, and he is now studied for his (not unrelated) astrological works—also because of his having produced the last great commentary on Ptolemy’s astrological manual, which he entitled, *Claudii Ptolemaei Pelusiensis libri quatuor, De Astrorum Iudiciis cum expositione Hieronymi Cardani*.⁷ Though he referred to himself in print mostly as a “Milanese” in virtue of his origin or as a “medicus,” in view of his profession, he would have considered that his breadth of knowledge qualified him as a “philosophus.” He attempted not once but twice to conceive of a unified theory of all things. His massive *De subtilitate*

⁷ In these connections, Anthony Grafton, *Cardano’s Cosmos: the Worlds and Works of a Renaissance Astrologer* (Cambridge: Harvard University Press, 1999); and Nancy G. Siraisi, *The Clock and the Mirror: Girolamo Cardano and Renaissance Medicine* (Princeton: Princeton University Press, 1997). I have drawn much from the discussions in both these fundamental books. On the spelling of the forename I follow Paola Zambelli.

(in twenty-two books), later reworked into *De rerum varietate* (in seventeen books), contains the substance of his thinking about humans within the natural world, and the heavens above, problems which he and his contemporaries regarded as the highest form of natural knowledge. It was not, he said in his autobiographical writings, his greatest work, but likely the one that would be most widely read; and apart from his celebrated *Autobiography*, he was right.⁸

Cardano conceived of *De subtilitate* and its sequel as a kind of encyclopedia of natural knowledge (at one point he calls the later installment a "history of the universe and the world"), organized around the concept of "subtlety." This concept embodied his basic view of the universe as a dense web of occult connections full of arcane meanings forming patterns which humans might endeavor to understand in order to achieve mastery over nature, themselves, and history. "Subtlety," in his definition, referred to "sensible things that are difficult to comprehend by the senses, and intelligible things difficult to comprehend by the intellect." Amplifying this, he says, "it is the science of some things that are and some that only seem to be; some which are seen with us sleeping, others with us awake."⁹ Characteristic of his effort to use hidden capacities as well as discover hidden meanings, he asserted the concept for the work came to him in a dream; and the method of compilation appears to give equal space to inspiration and pattern-recognition. Although he intended the work to be systematic, like those of his ancient models Aristotle and Pliny, and he divided it into categories like "1: On beginnings," "2: On the Elements," "3: On the Heavens," "5: On Metallic Things," "11: On the Necessity of Man," "13: On the Senses," "16: On the Sciences" and "17: On the Arts," nevertheless his inclusion of material in each of these categories was subject to the meanderings of his own mind over entire ranges of ancient and modern sources. He provided answers to major questions and minor: "why the sea is salty" as well as "why asses are stupid."¹⁰ Where he is not satisfied with the accepted schemes of organization he invents his own: the four excellent things in nature, the five kinds of stone, the seven human calamities, the nine kinds of animals.¹¹

⁸ All citations are from the *Opera omnia*, 10 vols. (Lyons: Jean Antoine Huguetan/ Marc Antione Ravaud, 1663). Here, vol. 1, p. 70, from his *De Libris Propriis*.

⁹ *Opera omnia*, vol. 3, *De subtilitate*, book 1.

¹⁰ *Ibid.*, book 10.

¹¹ On these features see Ian Maclean "The Interpretation of Natural Signs: Cardano's *De Subtilitate* Versus Scaliger's *Exercitationes*," in Brian Vickers, ed., *Occult and Scientific Mentalities in the Renaissance* (Cambridge: Cambridge University Press, 1984), p. 242.

He avoids a unilateral approach, and endeavors rather to proceed back and forth between universals and particulars. Laws come from experience and return to organize the results of yet other experience. Everyday observations form the basis for weighty conclusions, as when the presence of salt in the sea goes to prove that the world is eternal. The work is as much an essay on a method of inquiry as on the matter at hand. He subjects his hypotheses to tests, and draws more hypotheses from his tests. Sometimes failed tests make no dent in his theory. Gold, in principle, tastes better than silver because it is higher on the scale of excellence; however, in practice this quality does not manifest itself.¹² He also uses particular and sometimes rather homely tests to demonstrate this or that much more weighty point. To explain the effect of tides on the surface of water he suggests pinching the skin to form a “tumor” and observing what this does to the surrounding skin.¹³ The approach seemed to engage enough readers for numerous re-printings, although it also gained him the ridicule of the consummate scholar Julius Caesar Scaliger—damagingly or innocuously, according to different modern interpretations.¹⁴

The main force in the universe is celestial heat, which causes motion and change by action in varying degrees on the living souls existing in all matter, including animals and humans. It seems to take the place of the peripatetic notion of substantial form and introduce a hylozoic position closer to Plato, the Neoplatonists and even Averroes—whose ideas about unity to some degree inspired his own, expounded in a particular treatise *De uno*. In a posthumously published treatise on nature, Cardano remarks, “whoever has written about the soul says it is either the author of nature, or else is nature itself.”¹⁵ At one point in *De subtilitate* he says natural heat and the soul are also the same thing.¹⁶ The sun and the other heavenly bodies possess this heat and communicate a generative force to the world. This is evidently the basis of astrology. Indeed, “no one may deny” that such forces exist, he said; because “they rule all mortal things,” despite any assertions to the contrary by “the ambitious and the impious.”¹⁷

Cardano’s scheme of natural philosophy challenged the astrological tradition as described by Ptolemy, removing fire from the list of elements

¹² *Opera omnia*, vol. 3: *De subtilitate*, bk. 5.

¹³ *Ibid.*, bk. 2, *De elementis*.

¹⁴ Innocuously: Grafton, *Cardano’s Cosmos*, p. 4; damagingly: Ian Maclean, *Learning and the Market Place: Essays in the History of the Early Modern Book* (Boston: 2009), p. 23.

¹⁵ *Opera omnia*, vol. 2: *De Natura*, chap. 3.

¹⁶ *Ibid.*, vol. 3: *De subtilitate*, bk. 2, *De elementis*.

¹⁷ *Ibid.*: *De rerum varietate*, bk. 3, chap. 13.

because of its special role in the universe, leaving only water, air and earth, so there could be no four-part division of the constellations according to their relation to the elements; and he overturned the division of the planets according to their relation to the four qualities by removing cold and dry and leaving only hot and moist.¹⁸ Moreover, he was able to demonstrate that the *Centiloquium*, widely used by practitioners, was actually a later forgery, not an astrological work by Ptolemy. In his commentary on the *Tetrabiblos*, he attempted to restore ancient astrology to its former splendor. He identified traces, in his source, of the earlier, and in his mind unreliable, Chaldean and Egyptian traditions, so these could be expunged. Instead, he would place before the public a purified version, fit to silence the skeptics and restore the prestige of current practice. He expanded upon Ptolemy's comments regarding where astrology was more reliable (say, in dealing with the weather) or less (say, in predicting the exact course of a person's life). He drew out to greater length (in passages later carefully read by Kepler) Ptolemy's conjectures concerning the rapport between the chief planetary aspects and the harmonies in music. Where Ptolemy had merely mentioned the significance of comets, he added a whole section, based on the wide-ranging literature on the topic in his own time, by Johannes Müller known as Regiomontanus (1436–76), Giovanni Pontano (1426–1503), Agostino Nifo (1473–1538 circa). To the astrologer's toolkit he confirmed the modern addition of conjunction theory in relation to the fates of nations, drawing upon medieval, and especially Islamic, traditions subsequent to Ptolemy. And as part of his set of demonstrations of astrological technique, he introduced and explicated the nativity of Jesus Christ, a gesture that certainly had not improved matters for the similarly daring Cecco D'Ascoli, burned at the stake for theological errors in 1327.¹⁹ Cardano hoped to answer definitively the questions raised by a debate that had begun practically with the Renaissance. If astrology could even illuminate theology, the queen of the sciences, its value was secured.

Bacon belonged to the next generation (d. 1626); and as one of the paradigmatic intellectual innovators of the Renaissance, he considered a purely mathematical approach to celestial matters to be highly defective.²⁰

¹⁸ The following analysis owes much to Grafton, *Cardano's Cosmos*, chap. 8.

¹⁹ Ernst Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, tr. Mario Domandi (NY: 1972), p. 107. On the Christ horoscopes in general, Ornella Pompeo Faracovi, *Gli oroscopi di Cristo* (Venice: 1999).

²⁰ Concerning Bacon and his project, apart from the scholarship mentioned below, Stephen Gaukroger, *Francis Bacon and the Transformation of Early-Modern Philosophy* (Cambridge, New York: 2001); as well as Perez Zagorin, *Francis Bacon* (Princeton: 1998). For a

"Astronomy, as it now stands, loses its dignity by being reckoned among the mathematical arts, for it ought in justice to make the most noble part of physics."²¹ He agreed with the division of tasks between astrology and astronomy, with the first comprising knowledge about the significance of the movements, and the second about the movements themselves; but he considered the two approaches to be worthy of study together.²² He thought astrological knowledge was real, but its use and practice needed to be reformed. "Astrology is... so full of superstition that scarce anything can be discovered in it, though we judge it should rather be purged than absolutely rejected." The basic principle of stellar influences upon which astrology was based he found to be unimpeachable, and likewise the notion of a rapport between the microcosm of human affairs and the macrocosm of celestial ones. He said, whoever understood the connection "between terrestrial and celestial things, and well understands the more general appetites and passions of matter, which are powerful in both, may receive a clear information of what happens above from that which happens below; and from what passes in the heavens, he may become acquainted with some inferior motions hitherto undiscovered, not as these are governed by those, but as they both have the same common passions."²³

Stellar forces were not only heat and light, in Bacon's view, but included "certain other influences," which varied in kind and strength according to the planet or star in question, and according to the relation between the planet or star and the earth. He did not venture to pronounce on the precise character of these other influences; it was enough to know they existed and worked observable effects in the world, and to understand something of the dynamics. He outlined the studies that might be

provocative rereading of the biographical aspects, Lisa Jardine and Alan Stewart, *Hostage to Fortune: The Troubled Life of Francis Bacon* (New York: 1999); and a passionate defence of Bacon as a humanist, Brian Vickers, "The Myth of Francis Bacon's 'Anti-Humanism,'" in Jill Kraye and M.W.F. Stone, eds. *Humanism and Early Modern Philosophy* (New York: 2000), pp. 135–158. Concerning the impact, consider Nicholas Popper, "Abraham, Planter of Mathematics: Histories of Mathematics in Early Modern Europe," *Journal of the History of Ideas* 67 (2006): 87–106.

²¹ *The Works of Francis Bacon*, James Spedding et al., eds. 7 vols. (London: 1957–61), vol. 3, *The Advancement of Learning*, book 3, chap. 4.

²² My guides to Bacon's natural philosophy also include Paolo Rossi, *Francesco Bacone: Dalla magia alla scienza*, second edition (Turin: 1974); as well as D.P. Walker, "Spirits in Francis Bacon," in Marta Fattori, ed., *Francis Bacon: Terminologia e fortuna nel secolo XVII* (Rome: 1984), pp. 315–27.

²³ *The Advancement of Learning*, book 3, chap. 4.

done in this connection. Mixtures of rays (conjunctions, oppositions and other aspects) were to be taken into account, as well as the passage of the wandering stars through the zodiac. Angles were fundamental, and so were apogees and perigees, acceleration and retardation. The particular essence of a star was important—whether fixed or wandering, whether one color or another, whether twinkling or not, large or small. Tradition could be of help where observation was lacking, in terms of the ages-old agreed-upon characters of the stars (the beneficence of Jupiter and Venus, the maleficence of Saturn and Mars). When all of these features were calibrated and described, the result, in Bacon's view, would be a "sane astrology," founded upon the same "physical reasons" as a "living astronomy."

The trouble with astrology, according to Bacon, was not the principles per se, but the astrologers and their traditional practices for judging of the future. In other words, events and characters were the products of a network of cosmic connections governing the great body of the world. However, "we reject, as an idle figment, the doctrine of horoscopes, and the distribution of the houses, though these are the darling inventions of astrology, which have kept revel, as it were, in the heavens."²⁴ Instead, in the spirit of the Great Instauration, of which *The Advancement of Learning* formed a part, i.e., Bacon's project for a "total reconstruction of sciences, arts and all human knowledge, raised upon the proper foundation," he would reform astrology by eliminating the uncertain and the patently false and collecting what could be verified.²⁵ There were, in his mind, four routes to truth in this science. The first two were by "experiments" past and future, by which he meant experiences of predictions gone right; next came traditions, and finally "physical reasons."²⁶ He proposed a collaborative effort of hitherto unimagined proportions, to proceed from the mass of evidence to the formulation of new laws. "The astrologers may, if they please, draw from real history all greater accidents, as inundations, plagues, wars, seditions, deaths of kings, etc., as also the motions of the celestial bodies . . . to . . . erect a probable rule of prediction." Such information was of course to be carefully scrutinized. "All traditions should be well-sifted, and those thrown out that manifestly clash with physical

²⁴ Ibid., Proemium.

²⁵ Ibid., book 3, chap. 4.

²⁶ Concerning this aspect, Didier Deleule, "Experientia-experimentum chez F. Bacon," in *Francis Bacon: Terminologia e fortuna nel secolo XVII*, pp. 59–72.

reasons, leaving such in their full force as comport well therewith." This, he said, "we take for the surest guide to astrology."²⁷

Bacon's diffidence with regard to contemporary astrological practice, combined with his acceptance of the principle of stellar influences, fit a pattern shared among other figures who have been considered to be leading innovators in a period of rapid intellectual change. Where the changes were about to lead, from his standpoint and that of others involved, seemed much less clear at the time than it has to subsequent historiography focused on explaining the advent of modern science. There was nothing to dissuade him from the conviction that his occult interests served the purposes of his empirical approach to knowledge, rather than militating against it. A history of his work that takes astrology into account therefore restores to us a whole research agenda that was completely lost to the early 19th century editors of *The Advancement of Learning* who left such interests out entirely, or the early 20th century historians who passed over them in silence.²⁸

Kepler contrasted sharply with Bacon, ten years his senior, in terms of method as well as intellectual proclivities.²⁹ For one thing, he was a heliocentrist, convinced by Copernicus; and Bacon was not. He tended toward a priori explanations, which he attempted to defend first on a priori grounds (elegance, aesthetic, mystical) and only then by empirical data. Number mysticism, drawn from Platonic Neopythagoreanism, informed the world picture he first presented in the *Mysterium Cosmographicum* (Tubingen 1596), where the cosmological model was based on the existence of six planets and six geometrical figures including the five regular solids nested one inside the other, plus the outermost sphere. Plato, in those pages of the *Timaeus* which contained so much of ancient natural knowledge, had coordinated four of the solids with the four elements (cube: earth; tetrahedron: fire; octahedron: air; icosahedron: water). Kepler ordered all five by importance from a mathematical viewpoint (cube, tetrahedron, dodecahedron, followed by octahedron and icosahedron), and

²⁷ *The Advancement of Learning*, book 3, chap. 4.

²⁸ At issue are *Of the Proficiency and Advancement of Learning*, by Francis Lord Verulam, ed. B. Montague (London: 1838); George Sarton, *Sarton on the History of Science*, ed. Dorothy Stimson (Cambridge, MA: 1962), p. 5.

²⁹ Concerning Kepler, apart from the specific texts on astrology mentioned below, consider Fernand Hallyn, *Structure poétique du monde: Copernic, Kepler* (Paris: 1987) and Bruce Stephenson, *Kepler's Physical Astronomy* (New York: 1987). The juxtaposition with Galileo is the topic of Massimo Bucciantini's brilliant *Galileo e Keplero: filosofia, cosmologia e teologia nell'Età della Controriforma* (Turin: 2003).

related them to the planets, with the three major ones including the earth and outward toward the fixed stars, and the two remaining ones toward the sun. He found a peculiar confirmation for this arrangement in the relation, explained by Plato, between the study of musical harmony and the five regular solids, since just as the solids were ordered in a hierarchy, likewise there were three chief intervals (octave, fourth, fifth) and two subordinate ones (third and sixth). His calculation of hypothetical distances of each planet from the sun on the basis of the related polyhedron seemed to coordinate with the latest planetary distances calculated by Michael Maestlin, his mentor.

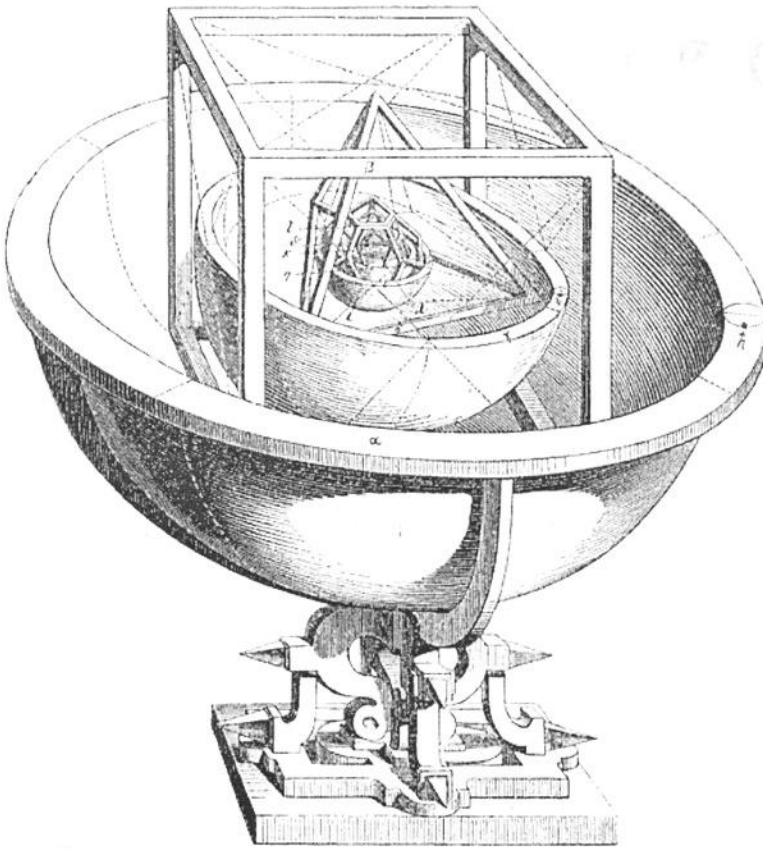
The question for Kepler was not whether planetary influences existed or could be measured, but whether the well-known characteristics agreed upon by generations of astrologers could be predicted by his geometrical model.³⁰ The results were encouraging. Mercury's famed inducements to celerity obviously referred to its octahedron, which could be turned cleanly on two angles, whereas the other figures, in Kepler's view, could not. Jupiter and Venus were supposed to indicate cause and effect, or fertility and offspring; and indeed, the pyramid (tetrahedron) of Jupiter, presumably, impregnated, whereas the icosahedron of Venus received the impregnation. In addition, "the female is always various and mutable," he said, and this was confirmed by the polyhedron of Venus. Jupiter's beneficence was noted already by Ptolemy. Kepler saw the same, but transposed this to the heliocentric universe; and he found an explanation once again in its related pyramid. Although generally beneficent, Jupiter was hostile to the other two superior planets, Saturn and Mars, a fact apparent in their three solids: the cube, the tetrahedron and the dodecahedron:

Also among their three solids absolutely none of their observable properties agrees, though Mars conspires with Saturn in malice alone. To this I relate the variability of their angles, which is peculiar to them, and common to both.

The beneficent planets could also be explained by their solid geometry: "the constancy of the angles between their edges alone, is evidence of benignity."³¹

³⁰ On Kepler's astrological ideas, Gérard Simon, *Kepler: Astronome, Astrologue* (Paris: Gallimard, 1979); Judith V. Field, "A Lutheran Astrologer: Johannes Kepler," *Archive for History of the Exact Sciences* 31 (1984): 189–273; as well as Sheila J. Rabin, "Kepler's Attitude Toward Pico and the Anti-Astrology Polemic," *Renaissance Quarterly* 50 (1997): 750–770.

³¹ Modified from Kepler, *The Secret of the Universe*, tr. A.M. Duncan (New York: 1981), pp. 115–6. In addition, here, Mary Ellen Bowden, *The Scientific Revolution in Astrology: the English Reformers, 1558–1686*, PhD dissertation, Yale University, 1974, p. 112.



α Sphaera Saturni. β Cubus. γ Sphaera Jovis. δ Tetraëdron. ε Sphaera Martis. ζ Do-
 decaëdron. η Orbis Terrae. θ Ikosaëdron. ι Sphaera Veneris. κ Octaëdron. λ Sphaera
 Mercurii. μ Sol, Medium sive centrum immobile. (Comp. Fol. 214.)

Fig. 7.1: Kepler's Polyhedric Model

In 1606 he finished his key work on the orbit of Mars, the *Astronomia nova*, where he announced his first two laws of planetary motion, stating equal areas and elliptical orbits, the latter of which posed serious difficulties for his earlier concentric spheroid model involving the polyhedrons. In this work he tended more towards an empirical approach than in his previous productions, collecting and interpreting the observations of Tycho Brahe and Maestlin, modifying his model in tandem with what he saw. The reason for the form of the orbits still eluded him, but he liked the

Neoplatonic concept of an *anima mundi* or world soul capable of making judgments. The planets, he suggested, have a “mind,” whereby they steer this way and that, always according to a pattern—in this case, a non-circular one. The new discoveries made no contribution to astrology, he said; although everyone knew the chief reason for doing astronomy was to further astrological interests.³²

In his later work Kepler kept the polyhedrons in his cosmology but used them less dogmatically and more heuristically, also in view of the new discoveries. A new idea began more and more to take hold of his imagination: the relation between planetary calculations and the harmonic series. Hints of this idea, elaborated from a theory of Ptolemy, already appeared in the *Mysterium*, but the mature version emerged in the *Harmonice Mundi* of 1618. He found a striking correspondence between the series and the planets’ angular velocities at perihelion and aphelion, and calculated the harmonies of all of them beginning with Saturn at aphelion, taken to be the lowest note, “G”. That the chromatic scale had twelve tones he found to be particularly significant in light of the twelve houses of the zodiac. Here too he elaborated on the cause of motion in the universe, based on the *anima mundi* or world soul, drawing upon the animal analogy used by Giordano Bruno and other Neoplatonists, an approach that led him far away from geometry and mathematics, and toward a general philosophy of matter. “Just as other animate beings consume food and drink, so the Earth also must take some kind of material from definite channels, to brew from it such a multiplicity of substances, because nothing is made from nothing.”³³ Indeed, “as the bladder pours out urine, so the mountains pour out rivers; as the body produces excrement of sulphuric odor and farts which can even be set on fire, so the Earth produces sulphur, subterranean fires, thunder and lightning.”³⁴ And so forth. As to the type of soul the Earth had, “it seems plainly to be a sort of flame.”³⁵

Within this view of nature there was plenty of room for astrology, and Kepler applied what he knew, making various prognostications and composing nativities for the court, as part of his employment by that inveterate dabbler in the occult, Emperor Rudolph II. He never doubted that the

³² John David North also makes this suggestion in *The Fontana History of Astronomy and Cosmology* (London: 1994), pp. 309–326.

³³ *The Harmony of the World*, tr. and notes by E.J. Aiton, A.M. Duncan, J.V. Field (Philadelphia: 1997), p. 363.

³⁴ *Ibid.*, p. 364.

³⁵ *Ibid.*, p. 366.

planetary aspects powerfully influenced the world (“for I saw with great consistency that the state of the atmosphere was disturbed whenever planets were either in conjunction or configured in the aspects commonly spoken of by the astrologers”) or that this influence was transmitted to the *anima mundi*.³⁶ Individual souls responded, much as the Earth itself, to the stellar influences, and the collective impact of these effects could influence mass actions: hence the coincidence of wars and other major human events with the major conjunctions. Furthermore, souls received at birth an impression of the zodiac, which created dispositions of character. “For since the vital faculty, lit in the heart, and burning as long as life persists, is a kind of zodiac circle, since its essence consists in activity, and in a flow of flame, as it were, the result is that the whole sensible shape of the zodiac flows into it when it has been freshly lit at birth.”³⁷ The planets, the ascendant house, the descendent 180 degrees away, the mid-heaven or cusp of the tenth house, all sent particular harmonies to the soul, forming predispositions, inclinations, shades of character. The study of a nativity was a key element in judging and understanding a human being. For instance, he hypothesized, “those who are born at a time of many aspects among the planets generally turn out hard-working and industrious.”³⁸ His own nativity he adduced as an example.

Also in the *Harmonice* Kepler engaged in the nearly obligatory practice of denouncing the naïve strain of working astrology, as he had done already in his annual predictions of 1598 and 1599. Rereading Giovanni Pico della Mirandola’s by now classic diatribe, he said he was led “to confirm my condemnation of a great many superstitions,” and attempted to find ways of restoring the conceptual foundations.³⁹ Experience showed no presumed celestial effects to be ineluctable, and no planetary dispositions to be determining. The space of predictions obviously had to be redefined and circumscribed. Too often, he said, the planets were regarded as omnipotent gods, inexorable and capable of creating effects at will, although few observers of those effects had considered exactly what might be the physical causes, i.e., the actual mechanisms that brought them about from the standpoint of current natural knowledge. The polyhedron theory was one way to do this, but this was only part of a multi-level project. In fact, he began the work of reforming astrology in 1602

³⁶ Ibid., p. 360.

³⁷ Ibid., p. 374.

³⁸ Ibid., p. 375.

³⁹ Ibid., p. 360.

with the publication of his *De fundamentis astrologiae certioribus*. True to its title, there he proposed to demote the zodiac from its primary role, for the same reasons that Pico had poured scorn on it: because the precession of equinoxes across the centuries had put the actual positions of the stars out of phase with the positions supposed in the traditional view. He would consider the names of the houses to be irrelevant and put much more emphasis on the Ptolemaic aspects, to which he added three new ones: the quintile (72°), bi-quintile (144°) and sesqui-quadrante (135°). He would also follow the contemporary trend, begun by Cardano, of a rapprochement with Arab astrology, in attending more seriously to planetary conjunctions.

Kepler thought he saw his views spectacularly vindicated by the appearance of a new star in the constellation Serpentarius in 1604, close to where a Great Conjunction of Jupiter and Saturn had occurred the year before in Sagittarius, signaling the beginning of the Fiery Trigon or triplicity of Sagittarius, Aries and Leo, whose slowly gyrating 30 degrees of arc it would continue to traverse for the next 200 years.⁴⁰ Such events, he was convinced, were obviously significant—although interpreting the significance was (he opined) probably beyond the abilities of any of the observers. In one work dedicated to the phenomenon, he insisted, “The star’s significance is a difficult matter to establish and we can be sure of only one thing: that either the star signifies nothing at all for Mankind or it signifies something of such exalted importance that it is beyond the grasp and understanding of any man.”⁴¹ In his definitive work on the topic, the *De stella nova*, published in 1606, he indicated his hope that the event signaled a “beautiful and lasting ending” to human suffering, but he reiterated his doubts about humans’ ability to interpret the signs in any way that might be useful to them. The best option for humankind, in his view, was to take the occasion as a prompting to turn more piously to the things of faith, and repent before it was too late.

Later in the *Tertius interveniens* of 1610, he assumed the role of a mediator between the naïve astrologer and the skeptic, with a “warning, to true Theologians, Physicians and Philosophers... when simply rejecting the

⁴⁰ On his involvement in the relevant controversy, M.A. Granada, “The Discussion between Kepler and Roeslin on the Nova of 1604,” in M. Turatto, S. Benetti, L. Zampieri, and W. Shea, eds. *1604–2004: Supernovae as Cosmological Lighthouses*, ASP Conference Series, Vol. 342 (Provo, UT: 2005), pp. 30–42.

⁴¹ Kepler, *Opera Omnia*, ed. Christian Frisch, 8 vols. (Frankfurt: 1858–71), vol. 1, *Bericht vom neuen Stern*, 1604, p. 396; translation from Granada, “The Discussion,” p. 37.

stargazing superstitions, not to throw the baby out with the bathwater and thereby ignorantly act in contravention of their Professions.”⁴² The study of astrology, he pointed out, was no more uncertain than, say, the study of simples in medicine: both were arts of practice as much as bodies of knowledge, and both relied on the skill of the practitioner in applying the knowledge to the case. Moreover, “in the beginning there are also many failed experiments.”⁴³ Any attempt to forbid astrology, such as the various imperial injunctions in the ancient world and the recent bull of Sixtus V, would cancel an important road to physical and theological truth, and made no more sense than forbidding the study of anatomy. After all, he knew well that without astrology, he himself might not have been drawn in the direction of his major accomplishments. Recent scholarship has agreed.

So far we have been using the concept “science” implicitly to designate a wide array of often contrasting approaches to natural knowledge; and we have already seen some of this variety reflected in the activities of the thinkers discussed. Descriptive epithets are somewhat misleading; and at least one recent study has suggested that stargazers of all kinds in this period (for our purposes, those most inclined to be involved with astrology), might be designated “heavenly practitioners.”⁴⁴ Such a term would join the various physicians, mathematicians, philosophers, and practical astrologers, together in a single category. And they were many. Astrological knowledge, after all, was no less diffused within Renaissance learned society than natural knowledge was in general. University curricula included mathematics in the medical faculties because of the undisputed role of the heavenly bodies in the cycles of disease and health, critical days, and the like; therefore a part of medical and mathematical instruction involved astrology, and persons who customarily described themselves as physicians or mathematicians could be active astrological theorists, forecasters, investigators, and indeed reformers, as well. Astrology was also found in philosophical instruction, wherever the philosophy of nature was involved, so here again was a place for the astrologically inclined. Likewise, theology instruction might refer to astrology, if mainly as part of the discussion about free will and divine judgment.

⁴² *Opera omnia*, vol. 1, p. 543.

⁴³ *Ibid.*, p. 630, thesis 111.

⁴⁴ Robert S. Westman, *The Copernican Question: Prognostication, Skepticism, and Celestial Order* (Berkeley: 2011), Introduction.

Just as natural knowledge practitioners in general existed also outside the university, so did the learned forms of astrology that are our object here, and if the professions of physician, philosopher or astrologer, could be exercised in a courtly or an academic (but non-university) context, so also could they be exercised separately from any specific institutions. A few examples will suffice. Nicholas of Cusa (1401–64) was undoubtedly a “heavenly practitioner,” in the sense so far suggested, but he defied any easy characterization. A prelate and eventually a cardinal, trained in law at Padua, he was also a polymath and a philosopher of nature: his ideas about motion influenced a generation. Marsilio Ficino called himself “Florentinus,” as much in view of his place of birth as of his particular allegiance to Florence and the Medici family. To the Medici court he served as a kind of scholar-at-large, especially dedicated to translating and interpreting the texts of Plato and others, and he acted as an educator; he was ordained as a priest in 1474. By contemporaries and by later readers he was known as “physician” and “philosopher”—two interests which he combined in a lifelong effort to understand human life in its cosmic context. Paracelsus regarded himself chiefly as a physician, although his impact, like that of Marsilio Ficino in a previous generation, was felt throughout the fields of natural philosophy. Copernicus called himself “Torinensis,” i.e., “from Thorn” in Prussia, which he placed on the title page of his books. He would probably have agreed with the appellation “mathematician,” in spite of the misleading overtones this term now has.

Three Ages of Astrology in Science

To list, to count, to measure, and to represent results graphically: these were the major tasks of astrology, drawing upon astronomy and merging with the trends that historians of science have identified with the mathematicization of nature. And a more effective natal astrology was no less a motive in the drive for accuracy than were the need for better navigational tools and calendar reform. Geographical and stellar coordinates had to be correctly assigned for accurate determination of the ascendant and mid-heaven in a natal chart.⁴⁵ Astrology benefited no less than the other branches of applied astronomy from the attempts by Georg von

⁴⁵ For what follows, especially John David North, *The Universal Frame: Historical Essays in Astronomy, Natural Philosophy and Scientific Method* (London: 1989); and Idem, *Horoscopes and History* (London: 1986).

Puerbach and Regiomontanus to correct the 14th century Alphonsine Tables of planetary motions, or by Erasmus Reinhold (1511–53) in drawing up the Prutenic tables (1551) for the Duke of Prussia, or again, by Tycho Brahe (1546–1601) and Johannes Kepler in doing the Rudolphine Tables, (1627) for Emperor Rudolph II. The prediction of major celestial events such as eclipses could serve many purposes, astrological as well as purely astronomical, or even just to impress the indigenous hosts, as Columbus reportedly did in the new world, in respect to the lunar eclipse of 29 February 1504, on the basis of the tables of Regiomontanus. We can only guess to what extent astrological interests combined with the need to follow canonical rules regarding the Easter *computus* (following the first full moon after the vernal equinox) in motivating efforts to reform the Julian calendar, which by the 15th century was out of phase with astronomical movements by ten days; and the first attempts by Clement VI in the 14th century were finally brought to fruition in the 1582 reform by Gregory XIII.⁴⁶

Profound differences in approach among the various thinkers make generalizations hazardous concerning the basic changes over time in the relation between astrology and other kinds of natural knowledge. Ernst Cassirer posited Renaissance thought as being largely of a piece, at least chronologically; and he identified the principal dynamic throughout the period in the emergence of the concepts of human agency and the regular operation of laws of nature—two features that would play a mighty role in the emergence of modern science.⁴⁷ To these developments Renaissance astrology made a fundamental contribution, in his view. In the realm of the theory of causation, it introduced a naturalistic hypothesis, whereby events could be seen to be the result not of divine judgment but of forces within nature. Humans by their intelligence were able to penetrate the inner workings of the cosmos and to understand the future ramifications above and below. On the other hand, the anti-astrology debate, which resurfaces from time to time throughout the period, focusing on the issue of determinism versus freedom, of destiny versus choice, and obviously, of predestination versus free will, reminded about human capacity to change the present and the future, independently of divine will. Thus, some of the first classics of thought relating to celestial influences were

⁴⁶ On calendar reform, John Heilbron, *The Sun in the Church: Cathedrals as Solar Observatories* (Cambridge, MA: 1999); George Coyne, M.A. Hoskin and O. Pedersen, eds. *Gregorian Reform of the Calendar* (Rome: 1983).

⁴⁷ Cassirer, *The Individual and the Cosmos in Renaissance Philosophy*, chap. 3.

being completed, by Nicholas of Cusa (1401–64) and others, exactly while Giovanni Pico della Mirandola railed against the astrologers; and astrology continued to be a science in spite of opposition by some of the best minds, at least until the mid-17th century. For distinguishing between the more astrologically inclined thinkers, we might utilize the same analytical categories that current historiography has applied to Renaissance thought in general: scholasticism, humanism, Platonism, Aristotelianism, all of which bear on the concepts of natural knowledge in one way or another.⁴⁸ We would thus find Nicholas of Cusa connected in varying degrees with the neo-scholastic, humanist and Platonist trends, Ficino with the same, and Pietro Pomponazzi with humanism and Aristotelianism.

However, beyond these commonalities, which help to bring some unity into the variety of thought, we may note a definite chronological development. Between the first humanist commentaries on Ptolemy's *Tetrabiblos* by, for example, George of Trebizond, and the movement for astrological reform of the 17th century, the science of divining by the stars passed through three basic periods. First, roughly corresponding to the Quattrocento, there was a period of assimilating existing astrological knowledge to the insights from the newly discovered Hermetic corpus and Renaissance Neoplatonism. The 16th century brought consolidation and innovation, as well as new insight from the revival of Aristotelianism. Conjunction theory (particularly drawn from the Arabic tradition of Albumasar) began to give way to Ptolemy-based natal astrology. Finally between the late 16th and early 17th centuries came a rapprochement with newly emerging approaches to natural knowledge, which would eventually cast astrology into disrepute. A full account of the many figures involved, from Germany to Italy to Spain to Britain, would be impossible here. However, a few particular figures deserve special notice.

Of the Quattrocento assimilation of Platonism and Hermeticism, the case of Nicholas of Cusa is highly indicative, also because of the influence on Ficino. In works such as "On Learned Ignorance" he discussed the main principles of his philosophy as a Christian humanist answer to questions left open by Plato and Aristotle, while hewing to a Platonic line

⁴⁸ Paul Oskar Kristeller, *Renaissance Thought and its Sources* (New York: 1979), pp. 21–32; 85–105; and now, the two volumes by James Hankins, *Humanism and Platonism in the Renaissance*, 2 vols. (Rome: 2003–4); as well as Idem, *Plato in the Renaissance*, 2 vols. (NY: 1990); and Charles Schmitt, *Aristotle in the Renaissance* (Cambridge, Mass.: 1983); and Daniel A Di Liscia, Eckhard Kessler and Charlotte Methuen, eds., *Method and Order in Renaissance Philosophy of Nature: the Aristotle Commentary Tradition* (Aldershot: 1997).

with overtones from Pseudo-Dionysius and Ramon Llull.⁴⁹ Characteristically, his physics was bound up with his metaphysics—one could almost say that for him philosophy and theology were part of the same composition; and his ideas about the nature of things came from this.⁵⁰ In a chapter on “The Sprit of All Things,” he remarked: “this spirit, which is called nature, is spread throughout, and contracted by, the entire universe and each of its parts. Hence, nature is the enfolding (so to speak) of all things which occur through motion.” Moreover, “motion descends by stages from the universal [*universum*] unto the particular, where it is contracted by the temporal or natural order. But this motion, or spirit, descends from the Divine Spirit, which moves all things by this motion.”⁵¹ A concept of planetary influences was implicit in this view: “certain causes of coming events are latent in terrestrial things, as the produce [is latent] in the seed,”⁵² placed there by Divine Providence. Still, the difficulty, if not the impossibility, of gaining precise information regarding planetary positions, made actual predictions difficult, if not impossible, and (he clarified in Sermon 265) whenever judicial astrology per se pretended to guess the mind of God, it descended into impiety.

Ficino deserves mention here not least because of the fundamental role in 16th century natural knowledge played by the Platonic and Neoplatonic texts he brought into philosophical discourse and instruction, which in turn (as Bouché-Leclercq articulated) served as a basic framework for astrological thinking. In spite of his denunciation of the astrologers in *Disputatio contra iudicium astrologorum*, penned some sixteen years before Pico’s more famous one, his outlook accepted many fundamental premises of the astrological tradition. In the third book of his *De vita*, significantly entitled “On Procuring Life from the Heavens,” he attributed to

⁴⁹ Especially, Charles H. Lohr, “Metaphysics,” in *The Cambridge History of Renaissance Philosophy*, p. 548. Also see insights in P. Moffitt Watts, “Pseudo-Dionysius the Areopagite and Three Renaissance Neoplatonists: Cusanus, Ficino and Pico on Mind and Cosmos,” in James Hankins, ed., *Supplementum Festivum: Studies in Honor of P. O. Kristeller* (Binghamton, N.Y.: 1987), pp. 279–98.

⁵⁰ Ernst Cassirer made this claim for the whole of Renaissance philosophy in *The Individual and the Cosmos in Renaissance Philosophy*, pp. 4–5, in which Nicholas of Cusa plays a key role.

⁵¹ *Complete Philosophical and Theological Treatises of Nicholas of Cusa*, tr. Jasper Hopkins, 2 vols. (Minneapolis: 2001), *De docta ignorantia*, bk. 2, chap. 10. For the Pseudo-Hermetic background to Nicholas of Cusa’s statements in this book, Edward Grant, *Much Ado About Nothing: Theories of Space and Vacuum from the Middle Ages to the Scientific Revolution* (Cambridge: 1981), pp. 138–41.

⁵² *Marsilii Ficini . . . opera et quae hactenus extitere . . .* (Basel: 1561–76), vol. 1, *De triplici vitae*, book 2, chap. 10.

“the ancient Platonists,” the view that “all the species of inferior things and their properties are contained in the stars, figures parts and properties.” Rather than suggesting a simple model of planetary correspondences and micro-macrocosm references, he suggested, in this book, that individuals’ particular dispositions drew down upon them the influence of the world soul by way of the planets. Thus:

We are always easily exposed to the planets by affection and desire of the soul and by the quality of the spirit, in other words, to the planets which signify the same affection, desire, or quality. Therefore very often because of human affairs we are subject to Saturn by laziness, solitude and lack of movement, by theology and more secret philosophy, superstition, magic, agriculture and sadness. And we are subject to Jupiter by civil and ambitious affairs.⁵³

Planetary influences did not form invariable destinies; rather the reciprocal correspondences between the forces from the individual and the planets were mutually reinforcing. Perhaps thinking of his own Saturn-dominated geniture, he even suggested that he “did not believe” the cliché of that planet’s baleful effects; much of what the planet did depended on the will and actions of the seeker.⁵⁴

Of the 16th century Aristotelian revival Pietro Pomponazzi (1462–1525) was the prominent exponent, and his contribution to naturalistic explanation won him a place in accounts about the development of scientific methodology.⁵⁵ His approach to astrology combined insights from both the Platonic tradition and the Aristotelian one, although the Aristotle he admired was not the scholastic version previously taught in the universities. Harking back to the original texts, newly translated and purged of medieval accretions, he found the premises for a complete account of natural phenomena and causation, capable of explaining everything that had ever been, or might be observed in the world, largely in an astrological key. In the debate regarding the existence of demons, he acknowledged the theological dogma of Christianity in this regard, while insisting nonetheless that other powers in the universe were more than sufficient

⁵³ *De triplici vita*, book 2, chap. 2.

⁵⁴ Raymond Klibansky, Erwin Panofsky, Fritz Saxl, *Saturn und Melancholie: Studien zur Geschichte der Naturphilosophie und Medizin, der Religion und der Kunst* (Frankfurt: 1992), pp. 367–94.

⁵⁵ Cassirer, *The Individual and the Cosmos*, p. 107. In addition, Antonino Poppi, “Fate, Fortune, Providence and Human Freedom: Pietro Pomponazzi,” in *The Cambridge History of Renaissance Philosophy*, pp. 653–60; and Idem, *Introduzione all’aristotelismo padovano* (Padua: 1970); and G. Piaia, ed., *La presenza dell’aristotelismo padovano nella filosofia della prima modernità* (Padua: 2002).

for understanding any occult effects. The notion of the mortality of the soul, which he separated from religious beliefs, was a necessary conclusion from the essential fatalism of a coherent account of man based on substance, form and motion. Against the strong version of predestination, which he attributed to the Stoics, he claimed that individual souls were imprinted at birth with the figure of their geniture, although much might happen later on. There was nothing to be amazed that Plato and Socrates manifested contrasting characters, if their genitures were dominated, respectively, by Saturn and Jupiter.⁵⁶ Powerful effluvia stored in fixed and moving stars, directed at the earth, continued to influence bodies and minds throughout lifetimes, modified by the various aspects and conjunctions that turned, deflected or reinforced the influence; but particular natures were formed at birth in the substance of the individual, conditioning the boundaries of thought and action. Against the widely-held view that the evil in humanity occasioned evil effects in the heavens, he suggested that heavenly effects instead produced the evil in humans, and that wars, floods, fire, and so forth were the necessary consequences of the world's perennial need to renew itself.⁵⁷

Philippus Aureolus Theophrastus Bombastus von Hohenheim, called Paracelsus (1493–1541), was a good example of how Platonic and Aristotelian strands could be woven together in new ways.⁵⁸ In his view, the human body existed amid a complex of influences: elemental, astrological and divine. The elemental part regarded not only the four Aristotelian elements of earth, water, air and fire, and the ethereal fifth essence, but Paracelsus's own three major principles of salt, mercury and sulphur. The actual functions of the body were involved here, including the vital action of the *archaeus* which worked over the intake of food. The upper level of the Divine connected the "spirit of life" within humans with the divine Spirit. In the middle range was situated the level of human existence, where the stars were involved not only as pinpoints of the forces emanating throughout nature but also as signs or even metaphors for explaining the microcosm's connection to nature and revealing the particularities of an individual human. In his *Astronomia Magna* he wrote, "God gave unto man all the arts and everything that is natural, through the medium of the

⁵⁶ *Opera* (Basel; 1567), p. 641.

⁵⁷ *Opera*, p. 651.

⁵⁸ Charles Webster, *Paracelsus: Medicine, Magic and Mission at the End of Time* (New Haven: 2008); still useful is Walter Pagel, *Paracelsus, an Introduction to Philosophical Medicine in the Era of the Renaissance* (New York: 1982).

heavens, because the heavens are the light of nature.”⁵⁹ Moreover, “there is one human nature, derived from the earth, and another from the heavens.” And “everything which man is subject to in the light of nature comes from the stars. All natural arts and human wisdom are given by the stars; we are the pupils of the stars, and they are our teacher. God has ordered everything in the light of nature so that we may learn from it.” He repudiated much of contemporary medicine, preferring to rely upon his own particular system, deriving his insights from combining ancient and modern teachings with those regarding chemicals, metals and the composition of things, partly learned from personal experience among local miners and partly from his mentor, the alchemist Johannes Trithemius. “The great art of medicine,” he said, “has its cornerstone in the art of astronomy, as does the disease of man, his health and his death . . . the physician who does not understand astronomy cannot be called a complete physician, because more than half of all diseases are governed by the heavens.”

Writing “to all alchemists” in his *Coelum philosophorum*, Paracelsus claimed, “The All is hidden in everything.” Alchemy, in his view, was just as likely as astrology to afford the insights necessary for the divine life; indeed the two sciences were united, if not in aim and intention, at least in the sharing of the microcosm-macrocosm analogy. Recent scholarship has confirmed the complexity of this relationship in Paracelsus’ time.⁶⁰ He was less certain than John Dee would be, in a later generation (born in 1527), that the two were actually sister sciences, directed respectively to the mystery above and the mystery below. However, material from both was scattered throughout his work, one often serving as an explanation or elucidation of the other. Both were directed to discovering the truth, in the case of alchemy, by “the proposition, the intention and the desire to transmute the subtle genus of metals from one into another.” Stars and stones above and below were bound up in similar processes. “The star is the spirit and formation of every stone. Indeed, every heavenly star, sun and moon, is in itself a stone, and the terrestrial stone comes from the heavenly one, as from the same fire, cinders and ashes, the same expulsions and purgations whereby the celestial one, clear and pure in its splendor, is separated and reduced.”⁶¹ These insights lay behind the proposals of his *Archidoxis magicae*, where he synthesized the results of

⁵⁹ *Paracelsus: Essential Readings*, ed. Nicholas Goodrick-Clarke (Wellingborough, Northamptonshire: 1990), pp. 109–110.

⁶⁰ William R. Newman and Anthony Grafton, “Introduction,” in Idem, eds., *Secrets of Nature: Astrology and Alchemy in Early Modern Europe* (Cambridge, Mass.: 2001), pp. 1–37.

⁶¹ *Coelum philosophorum*, in *Opera* (Geneva: 1658), vol. 2, p. 125.

alchemical with astrological wisdom into a system of magical talismans for each of the signs of the Zodiac. For instance, for the sign of Libra (we quote the 17th century translation by Robert Turner), "This Sigil is to be made of pure Venus [copper], and to be melted, poured out, and made when the Sun enters Libra . . . And this is to be noted, That when Venus is the ruling planet of the year or Reservator of the yeer, the Sigil will be of much more virtue, especially if those wear it, who were borne under the same Planet; and if it be made and prepared for them."⁶² Noteworthy were the curative properties: "It is an admirable remedy against all Bewitchings of Women, which hinder the act of generation, and especially in those whom they hate: In brief this Sigil is most profitable and excellent against all Maladies whatsoever; especially all griefs of the Secret Members." The reasoning made sense in terms understood by his contemporaries, but a far deeper yet subtler divide was about to open among them.

Copernicus' intellectual commitments have been hotly debated. A famous passage about the centrality of the sun, referring to what is regarded as his chief contribution to science, has been read alternately as a declaration of allegiance to Hermetico-Platonic principles (Debus) and as a casual assemblage of trite metaphors (North). We might suggest that it is something of both:

In the middle of all sits the Sun enthroned. In this most beautiful temple could we place this luminary in any better position from which he can illuminate the whole at once? He is rightly called the Lamp, the Mind, the Ruler of the Universe; Hermes Trismegistus names him the visible god, Sophocles' Electra calls him the All-seeing. So the Sun sits as upon a royal throne ruling his children the planets which circle round him.⁶³

What is clear is that apart from his repudiation of the Aristo-Platonic world picture, he drew from the context of current thinking as well as from that of current events. According to a recent interpretation, the outbreak of millenarianism occurring around the turn of the 16th century and continuing into the next three decades provided a profound stimulus for astronomical investigations of all sorts. Increasing awareness of the

⁶² *Archidoxes of Magic*, tr. Robert Turner (London: 1655), p. 146.

⁶³ *De revolutionibus orbium coelestium* (1543), fol. gv. Translated in Thomas S. Kuhn, *The Copernican Revolution* (Cambridge: Harvard University Press, 1957), p. 130; and cited in Allen G. Debus, *The Chemical Philosophy: Paracelsian Science and Medicine in the Sixteenth and Seventeenth Centuries* (New York: 1977), p. 230. Compare John D. North, *Stars, Minds and Fate: Essays in Ancient and Medieval Cosmology* (London: 1989), p. 412. For the historiographical context, Robert S. Westman, *The Copernican Question: Prognostication, Skepticism, and Celestial Order* (Berkeley: 2011), chap. 1.

inadequacies of the Ptolemaic system to account for the phenomena, triggered intense concerns about the accuracy of predictions. Copernicus embarked on his effort to redraw stellar positions precisely in order to place the knowledge of stellar influences on a firmer footing. On this reading, the astrological musings of Georg Rheticus, Copernicus's first interpreter and de facto collaborator on the first description of the Copernican system, were more than just outlandish expressions by a garrulous scholar not yet endowed with mature restraint. They were symptoms of a shared preoccupation with the practical consequences of stellar motion. And Copernicus's notorious omission of astral influences from his finished work was not due to disinterest but to fidelity to his model of composition, namely, Ptolemy's *Almagest*, which was similarly lacking (because Ptolemy had already covered such material in the *Tetrabiblos*). Like many contemporaries, Copernicus associated himself with a discipline "labeled astronomy by some, astrology by others."⁶⁴ And again, according to one interpretation, Copernicus became worried about the problem of the location of Venus and Mercury precisely because of the problem of predictions.⁶⁵ That was the instigation that turned him in the direction of an issue that had been most recently re-proposed by Pico, comparing the Ptolemaic view of the sun as the fourth revolving body, with the Egyptian tradition, followed by Plato and Aristotle, of placing the sun just above the moon. To save astrology, a plausible agreed-upon arrangement was necessary, and Copernicus's observations fit into these problematics.

Giacomo Zabarella presents the peculiar case of a thinker with definite astrological commitments, but whose astrology does not seem to have driven his natural philosophy to any great extent.⁶⁶ He is known to have been an avid collector and producer of nativities, and occasionally in his work he refers to astrologers as mixed mathematicians, without any of the customary disparagement. He is careful, of course, to distinguish between vulgar almanac-writers and true astrological scientists.⁶⁷ However, his Aristotelian approach yielded a cosmos alien to the hylozoic one of the Platonists and Neoplatonists. Here, the world is conceived as "a great animal," drawing from Averroes (a favorite author, indeed, of the Neoplatonists), but only in reference to the integrated motion of the whole. The principle

⁶⁴ Westman, *The Copernican Question*, p. 30.

⁶⁵ *Ibid.*, p. 86.

⁶⁶ In this connection, Antonino Poppi, *La dottrina della scienza in Giacomo Zabarella* (Padua, 1972). Also, Charles B. Schmitt, "Experience and Experiment: A Comparison of Zabarella's View With Galileo's in *De Motu*," *Studies in the Renaissance* 16 (1969): 80–138.

⁶⁷ *Opera Logica* (Frankfurt: 1608), col. 849.

of animism is wholly absent. As in the Aristotelian texts which form the stating point for his discussions, planetary influences, aspects, conjunctions, are rarely mentioned, and only turn up as asides, for instance, when referring to actual motions. On the whole, there is no appeal to them in any notions of causality. Whether his innovativeness consisted more in the turn away from animism, the preference for naturalistic over theological/metaphysical explanation, or his development of the argument by *regressus* (the long-standing view expressed by John Herman Randall), or the critical use of Aristotle (the recent contention of Paolo Palmieri), he appears to have had a considerable influence on another individual who came in contact with the School of Paduan Aristotelianism—namely, Galileo.⁶⁸

Galileo once again constitutes a paradoxical example, indeed, a highly controversial one.⁶⁹ Anyone who does horoscopes of his own children on his own time, and not as part of the obligatory chore of the university mathematician or the court philosopher, it is said, must have set more store by astrology than he lets on in his works. Thus, the famous ridicule poured on the practitioners (placed in the mouth of Sagredo, Galileo's voice in the Second Day of the *Dialogue Concerning the Two Chief World Systems*), for their shrewdly accurate predictions made mostly after the fact, and the like, may once again have accompanied a basic belief in the fundamental theorems of astrology: the power of the planets, the existence of influences, the macrocosm-microcosm analogy. After he implied in the *Sidereus nuncius* that the moons of Jupiter would favorably affect the Medici dynasty, responding to the murmurings against this view among learned folk in the city of Perugia, in a letter to Pietro Dini dated May 21, 1611, he concedes that perhaps smaller bodies, such as the Jupiter moons, might be ineffectual, while allowing, for the sake of argument:

to the larger celestial bodies the greater actions on things below, as the changes of season, commotions of the seas and the winds, disturbances of the air and (if they have actions on us) the constitutions and dispositions of the body, the general qualities and complexions, and other similar influences.⁷⁰

⁶⁸ Paolo Palmieri "Science and Authority in Giacomo Zabarella," *History of Science* 45 (2007): 404–27. Compare J.H. Randall, Jr, "The Development of the Scientific Method in the School of Padua," *Journal of the History of Ideas* 1 (1940): 177–20.

⁶⁹ For the following I am indebted to H. Darrel Rutkin, "Galileo Astrologer: Astrology and Mathematical Practice in the Late Sixteenth and Early Seventeenth Centuries," *Galilaeana* 2 (2005): 107–43.

⁷⁰ Galileo Galilei, *Edizione nazionale delle opere*, 20 vols. ed. Antonio Favaro (Florence: 1967³), vol. 11, letter 532.

At the very least, he appears to have maintained an open-minded attitude in this regard. However, our concern in this chapter is not to view the astrological beliefs or activities of natural knowledge practitioners, but to view the way astrology was bound up with their work. And in the case of Galileo, there are no signs whatsoever that it was.

At the turn of the 17th century, much thought was devoted to bringing in the harvest of Renaissance natural philosophy and applying centuries of thought to the improvement of human life, which appeared to be more endangered than ever by religious controversy and dynastic conflict. Galileo's new approach to matter and motion existed alongside other approaches harking back to the occult trend in Renaissance philosophy, seeking a key to unlock the secret harmony in the universe in order to bring humans back in line. Tommaso Campanella, whose own views on "the sense of things"—referring to the inflections of soul that animated all beings above and below—drawing from Bernardo Telesio, Hermeticism and Renaissance Neoplatonism, were expressed (among other more esoteric works) in a kind of scientific utopia called the *City of the Sun*, built according to astrological principles.⁷¹ The publication occurred in 1623, one year before that of Francis Bacon's *New Atlantis*, although the writing dated to 1602. Among the members of the Council of Ten, subordinated to Power, Wisdom and Love, was an official astrologer; and religious observances aimed to bring down the celestial influences into society.

Nothing rests on the altar but a huge celestial globe, upon which all the heavens are described, with a terrestrial globe beside it. On the vault of the dome overhead appear all the larger stars with their names and the influences they each have upon earthly things set down in three verses. The poles and circles are indicated but not entirely since there is no wall below. Instead they are completed on the globes resting on the altar below. Seven lamps, each named for one of the seven planets, are always kept burning.⁷² (Donno p. 31)

Campanella revealed his seriousness about using incantations and magical talismans as a part of practical astrology in the last book of his *Astrologicorum*. Against the ills of the soul, he began, we have the moral sciences; against the ills of the body, medicine; against family troubles,

⁷¹ Germana Ernst, *Tommaso Campanella: the Book and the Body of Nature* (Dordrecht: 2010); In addition, John M. Headley, *Tommaso Campanella and the Transformation of the World* (Princeton: 1997).

⁷² Tommaso Campanella, *La città del sole: dialogo poetico* = *The City of the Sun: A Poetical Dialogue* tr. Daniel John Donno (Berkeley: 1981), p. 31.

economics and mechanics; against the troubles of the state, political science (plus divine aid). "Also against the damage brought by the stars," he adds, "the astral science may provide a remedy, with the assistance of other doctrines."⁷³

The enthusiasm of thinkers like Robert Fludd for an obscure society known as the Rosicrucians, claiming to replace the authority of the universities and the humanist classics, and to put knowledge on a whole new footing rooted in Christianity and inspired by the work of Paracelsus, can easily be imagined.⁷⁴ A physician trained at Oxford, his unconventional ideas delayed his entry into the Royal College of Physicians. Meanwhile, he set out to reestablish medicine on his own. The mysterious Rosicrucian manifestoes, which he possibly received through contacts made during a period of study in continental Europe, seemed to chime with his own views about the importance of attending to magic and alchemy rather than the academic subjects. Although the Society was for him, as for most of those who claimed allegiance, more an impetus for thought than an actual association, he pronounced himself impressed. In the same work where he declared his allegiance (in response to expressions of skepticism by the chemical philosopher Andreas Libavius), he denounced conventional astrologers and all the mistaken and illusory practices enshrined in Ptolemy's *Tetrabiblos*, claiming to draw out of the study of stellar influences the necessary insights for a radically unconventional world picture. "Stellar influences in this inferior realm," he insisted, "are just as certain as is God's having ordered the things in this world."⁷⁵

Inevitably, he clashed with Kepler on the subject of the source and significance of harmony in the universe, although the differences were more in regard to specific interpretations, than in regard to the general picture of an animated world system with a near-divine center in the sun, which they clearly shared. The real contrast, at the methodological level, lay in his relative disinterest in modifying his models to suit the observational evidence, contrary to Kepler's continuous wrestling with this problem. In his (admittedly rather one-sided) way, he depicted Kepler and other mere mathematicians as those who "concern themselves with quantitative

⁷³ Germana Ernst, ed. and tr., *Opuscoli astrologici* (Milan: Rizzoli, 2003), p. 65.

⁷⁴ A useful review of current studies is in Johannes Rösche, *Robert Fludd: Der Versuch einer hermetischen Alternative zur neuzeitlichen Naturwissenschaft* (Göttingen: 2008), chap. 1.

⁷⁵ *Tractatus apologeticus integritatem societatis de Rosea Cruce defendens* (Leyden: 1617), p. 120.

shadows” whereas “the alchemists and Hermetic philosophers comprehend the true core of the natural bodies.”⁷⁶ How could Kepler make sense of the heavenly spheres without plumbing the depths beneath the surface of the earth? How, again, could Kepler have become so fixed on the number three and on the Arab commentators, missing entirely the elemental power of fire and of four? As for the harmonies themselves, he reinterpreted the Genesis story as a kind of musical emanation, beginning with the primordial monochord, producing the unison of unisons, intoned by God to set in motion all the concordant creatures and the world itself. In his *Utriusque Cosmi Maioris scilicet et Minoris Metaphysica, Physica atque Technica Historia* (Oppenheim, 1617), he suggested the following figure:

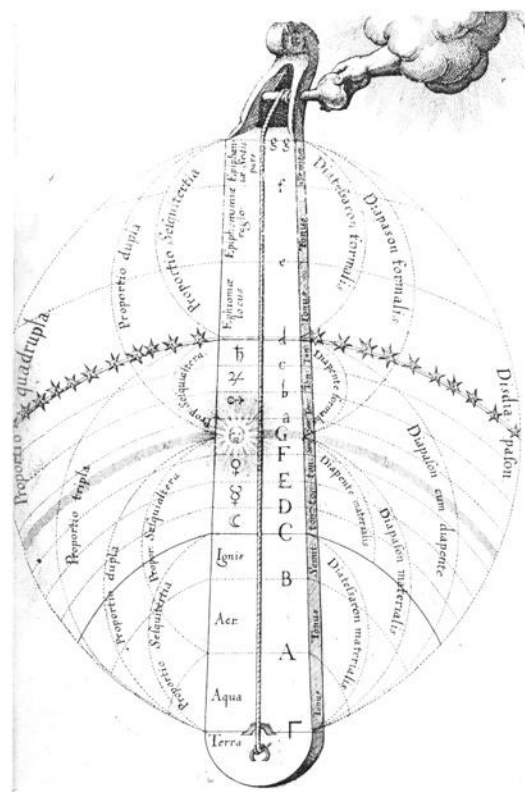


Fig. 7.2: Robert Fludd's Monochord

⁷⁶ Allen G. Debus, *The Chemical Philosophy*, p. 260, drawing upon Fludd's *Veritatis proscenium*, p. 12.

By way of explanation: "The string which by its vibration spreads the luminous effects of the Inspirer through macrocosm and microcosm as accents and sounds of love, as it were, is the luminous spirit which participates in the two extremes and which joins them together."⁷⁷

In contrast with Kepler's account of planetary effects based on the regular polyhedrons in which the planets' orbits were, in principle, embedded, Fludd viewed such effects in the light of the musical harmonies. The power of the perfect fifth corresponded to the undeniable influences, on the sublunary world, of the Moon, Mercury, Venus, and the lower solar region. In the case of Mercury, "the fifth resounds in the aquatic sphere; hence therefore inundations of water and perturbations of the seas, because of the tenuous and airy Mercurial spirit hidden in them, likewise indeed with its help, along with the Moon, it causes the flux and reflux of the seas." Venus, indeed, "referred to a similar consonance, which brought about a pleasant and suave symphony in the air, because of its exact concordant proportions."⁷⁸ The perfect octave on the other hand corresponded to the influence of the sun in producing all action and generation on earth, as well as the positive influence of Jupiter; however it also corresponded to the negative powers of Mars and Saturn. In the latter cases, the situation of the planet at one end of the octave and, at the other end, respectively, water and fire, elements contrary to the natures of those planets, confirmed the balefulness of the effect.

As a physician, Fludd paid particular attention to the harmonies within the body, which he denoted in still another striking diagram, relating the microcosm to the macrocosm:

⁷⁷ Translated by Peter J. Ammann in "The Musical Theory and Philosophy of Robert Fludd," *Journal of the Warburg and Courtauld Institutes*, 30 (1967): 209.

⁷⁸ *Utriusque cosmi maioris scilicet et minoris metaphysica, physica atque technica historia* (Oppenheim, 1617), book. 1, pp. 101–2.

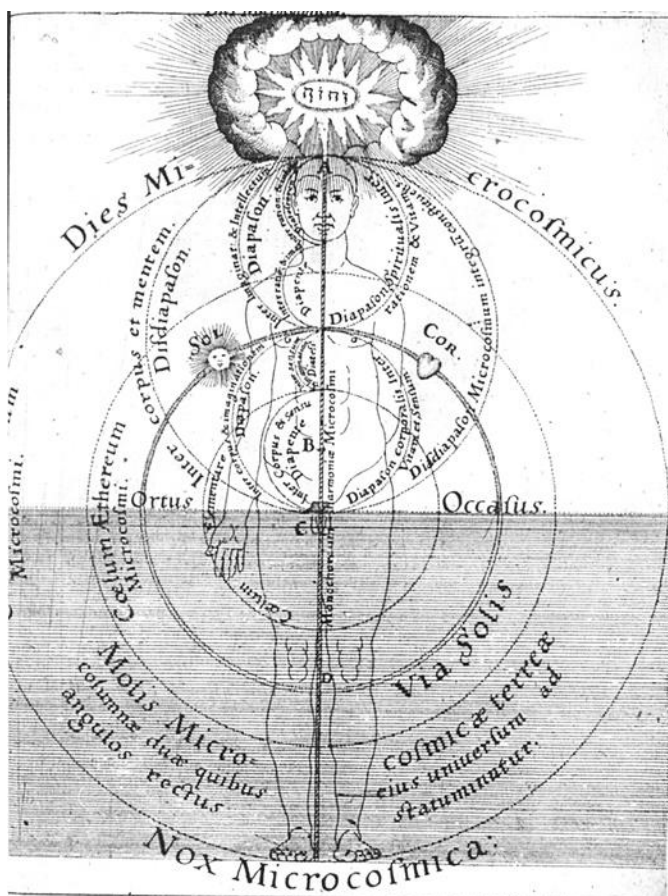


Fig. 7.3: Robert Fludd: Microcosm and Macrocosm

Here he found analogous coordinates to those which he found in the cosmic monochord.

On the left therefore we show the proportion between the intellect and life, found in the monochord where the spiritual octave is contained, to be double: likewise we show that in the same proportion of the monochord the corporeal octave sounds the interval extending from the sphere of the heart (that is, the sun), to the earth or genitals, uniting life and sense, that is, carnal nature, which inhabits the lower belly.⁷⁹

⁷⁹ *Utriusque cosmi... historia*, book. 2, p. 276.

Further harmonic intervals explicated further relations. His investigations along these lines eventually led to some striking conclusions:

Then in his midle spheare shalt thou erect a pavillion called the hart, Which lik the sonne in the greater World, shall send forth the essentiall beames circularly from his centre that therby they may animat and vivify euery member of this so Well erected a Microcosme.⁸⁰

These passages in his *Philosophicall Key* are thought to reflect an intellectual context within which William Harvey, another thinker tinged in some of the same vitalist ideas, conceived the circulation of the blood. No wonder Fludd was among the first to defend the *De motu cordis* when it came out in 1623 amid a flood of controversy.

The negative reactions to Fludd's many statements, restatements and combative confirmations of his philosophy typified the ambiguities of late Renaissance thought, and the vast differences in tendency that were still murkily evident between the emerging mechanistic interpretation and the occult philosophy. Marin Mersenne, close to the circle of Descartes, referred to Fludd, in private correspondence, as a "cacomagus, foetidae et horrendae magiae doctor et propagator,"⁸¹ and ridiculed his attachment to a mystical philosophy lacking experiential confirmation or quantitative foundation. Rather than rejecting Thomas Aquinas, Roger Bacon and Raymond Llull, whom Fludd excoriated for their stodgy adherence to tradition, Mersenne sought to draw from these figures the elements for a new and reformed alchemy, purged of all exaggerations and well placed, like Francis Bacon's reformed astrology, to set human knowledge on a new footing.

Pierre Gassendi, on the other hand, belonging to the same circle of thinkers as Mersenne and Descartes, expressed amazement about Fludd's apparent disinterest in the relation between words and things. It was bad enough that the creation story was incoherent, where it attempted to revise the biblical account by having the fixed stars made on the Second Day and

⁸⁰ Allen G. Debus, ed., *Robert Fludd and his Philosophicall key: being a Transcription of the Manuscript at Trinity College, Cambridge* (New York: 1979), based on "A Philosophicall Key. Or Ocular demonstration, opening and decyphering a great deale of the hidden mysteries of Nature, partly by an experimental conclusion, as also by an intellectual speculation..." Trinity College (Cambridge) MS 0.2.4.6, where this citation is from fol 24 verso. Cited in Debus, "Harvey and Fludd: The Irrational Factor in the Rational Science of the Seventeenth Century," *Journal of the History of Biology*, Vol. 3, No. 1 (1970): 90.

⁸¹ *Correspondance du Père Marin Mersenne, religieux minime. Publiée par Mme Paul Tannery*, ed. Cornelis De Waard, René Pintard, Armand Beaulieu, 17 vols. (Paris: 1932–1988), vol. 1, p. 62, cited in Debus, *The Chemical Philosophy*, p. 267.

only the planets on the Fourth Day. What was meant, that Mercury was created first and secondly the moon, from the reflection between Mercury and the lower regions, and next, Venus, out of the reflection between the sun and Mercury? Worse yet, the nine-sphere model made no sense. "Who can understand" this world picture, he said, "if we take it literally, and if we pay due attention to the sky that is above us?"⁸² The concentric sphere model with the *primum mobile* on the outside, imparting motion to the whole, with the earth in the center, had long been replaced by the Copernican heliocentric view.⁸³ Next, if the earth were the mother and progenitor of all creatures, the sun would have to be, not the giver of life, but the father and the source of the seminal fluid.⁸⁴ And if Fludd was such a lover of Pythagorean and Platonic symbolism, why did he miss the opportunity offered by the Copernicans to locate the life-giving fire where it should be, in the center of the cosmos? Finally, he was as misguided as William Harvey, in attempting to find a parallel between the perpetual circulation of the ethereal spirit in the arteries of the macrocosm, and the perpetual gyrations of the macrocosm; but at least Harvey had attempted to disprove the traditional theory by experimental evidence.⁸⁵

If anything, the emergence of a mathematized physics after the turn of the 17th century, and the apparent potential of explanations for natural phenomena based on demonstrations rather than on analogy and similitude, raised hopes for a more scientific astrology. Francis Bacon's appeals were only a symptom of a larger trend that extends to modern authors. Long before Paul Choissard, the early 20th century soi-disant inventor of the statistical method applied to horoscopes, quantitative and observational scientific methods were used for proving the validity of astrological technique.⁸⁶ Luca Gaurico (1475–1558) and Girolamo Cardano, who both tried to prove the validity of their different forms of astrology by a selection of some one hundred nativities apiece, with the pertinent explanations for how they illustrated the lives in question, were followed by

⁸² Pierre Gassendi, *Epistolica exercitatio in qua principia philosophiae Roberti Fluddi Medici reteguntur* (Paris: 1630), p. 49.

⁸³ *Ibid.*, chaps 46–51.

⁸⁴ *Ibid.*, p. 50.

⁸⁵ *Ibid.*, pp. 132–33.

⁸⁶ Paul Choissard, *L'influence astrale et les probabilités: origine, bilan et avenir de la question* (Paris: 1924), and more recently, Michel Gauquelin, *Neo-Astrology: A Copernican Revolution* (London: 1991); and sequels: Suitbert Ertel, "Bulky Mars Effect Hard to Hide: Comment on Dommanget's Account of the Belgian Skeptics' Research," *Journal of Scientific Exploration*, 14, No. 3 (2000): 431–446.

Johannes Garcaeus (1530–74), in the last third of the 16th century, who included no less than four hundred nativities. Meanwhile, Rudolf Goclenius tried to apply to divination the same empirical methods that the astrologers were applying to astrology, by observing carefully, for instance, that a sampling of men on whose foreheads he had noted a peculiar cruciform mark included fifty-one who died violent deaths.⁸⁷

The monks at the Santa Prassede monastery in Rome in the 1620s, under the direction of their abbot, Orazio Morandi, endeavored to test the various theories connecting stars to outcomes on an even larger scale. To discover recurrent characteristics in large numbers of natal charts they conducted interviews as well as consulting the printed compendia. To organize the collaboration in true Baconian fashion, they drew up questionnaires with particular regard for ascertaining exact birth times to the nearest minute, always a controversial item in the debate about astrology's effectiveness.⁸⁸ Afterwards, they were to sort the nativities according to outcome. Although they planned a section on individuals who obtained good fortune by evading dangers, as well as one on the varieties of fortune in general, the grim catalogue of possible catastrophes would give the best index of astrology's predictive power: cases of a fall from greatness, of exile, pursuit by enemies, wounds, failure to gain an inheritance or other expected riches, loss of things due to various disturbances, forced beggary, subjection to judicial proceedings including the death penalty, fatal accidents, assassination, not to mention the various illnesses: apoplexy, podagra, calculi, fluxes, spitting blood, ruptured veins and so forth. Only Morandi's imprisonment for disobeying Sixtus V's anti-astrology bull prevented the vast plan from being carried out. The task of proving definitively the effectiveness of astrological ideas was left to others, and the problem remained unsolved; and our analysis must break off inconclusively.

For each of the figures analyzed in this chapter, astrology was at once more and less than science. It was more because it involved a particular outlook on the world as well as a way of doing knowledge. It was less than science because its practitioners in all ages, no differently from Ptolemy himself, believed that many of its propositions, received on strength of tradition and evident plausibility, had not yet been verified. Ptolemy asked:

⁸⁷ In his *Uranoscopiae, chiroscopiae, metoposcopiae, et ophthalmoscopiae contemplatio* (Frankfurt: 1608), p. 272. See Grafton, *Cardano's Cosmos*, p. 267.

⁸⁸ Brendan Dooley, *Morandi's Last Prophecy and the End of Renaissance Politics* (Princeton: 2002), chap. 11.

If, then, a man knows accurately the movements of all the stars, the sun, and the moon, so that neither the place nor the time of any of their configurations escapes his notice, and if he has distinguished in general their natures as the result of previous continued study, even though he may discern, not their essential, but only their potentially effective qualities, such as the sun's heating and the moon's moistening, and so on with the rest; and if he is capable of determining in view of all these data, both scientifically and by successful conjecture, the distinctive mark of quality resulting from the combination of all the factors, what is to prevent him from being able to tell on each given occasion the characteristics of the air from the relations of the phenomena at the time, for instance, that it will be warmer or wetter? Why can he not, too, with respect to an individual man, perceive the general quality of his temperament from the ambient at the time of his birth, as for instance that he is such and such in body and such and such in soul, and predict occasional events, by use of the fact that such and such an ambient is attuned to such and such a temperament and is favorable to prosperity, while another is not so attuned and conduces to injury?⁸⁹

In Ptolemy's view, as in the view of the Renaissance thinkers so far analyzed, and others besides, astrology was a faith as much as a science: a faith that eventually better data-gathering would make real astrological knowledge possible, so that this knowledge could be used effectively to improve human life. In the absence of any single conceivable decisive proof, the value of astrology would be attested by the continuing commitment of its admirers and the accumulating evidence of its successes, which advancing knowledge seemed to guarantee would be more impressive in the future than in the past.

⁸⁹ Ptolemy, *Tetrabiblos*, tr. Frank Eggleston Robbins (Cambridge: Harvard University Press, 1940), I, 2.

CHAPTER EIGHT

THE NEW ASTRAL MEDICINE

Hiro Hirai

Introduction

The impact of astrology on medical theories and practice in the Renaissance still remains to be fully explored. Besides the general influences of celestial bodies on sublunary and terrestrial beings, physicians were traditionally taught to take astrology into account in questions such as: 1) conception or nativity; 2) crises of health or illness, known as “critical days”; and 3) medication. The link between medicine and astrology became especially firm after the work of Pietro d’Abano (1257–ca. 1315).¹

In the Renaissance, two major factors contributed to the modification of this traditional relationship between medicine and astrology. One is the severe criticism of judicial astrology, advanced by Giovanni Pico della Mirandola (1463–1494) in his posthumous work, entitled *Disputations against Judicial Astrology* (*Disputationes adversus astrologiam divinatricem*) (Bologna, 1496). Many of his contemporaries (followed by modern historians) generally considered that Pico rejected the divinatory aspects of astrology and accepted only its physical dimensions, which can be labeled as “natural astrology.” According to this interpretation, the influences of the celestial region were exerted only by physical means: motion, light and heat.² Pico thus criticized the astrological aspects of the doctrine

¹ See Nancy G. Siraisi, *Medieval and Early Renaissance Medicine: An Introduction to Knowledge and Practice* (Chicago: University of Chicago Press, 1990). Cf. also Andrew Wear, “Galen in the Renaissance,” in *Galen: Problems and Prospects*, ed. Vivian Nutton (London: The Wellcome Institute for the History of Medicine, 1981), pp. 229–267, esp. 245–250; Wolf-Dieter Müller-Jahncke, *Astrologisch-magische Theorie und Praxis in der Heilkunde der frühen Neuzeit* (Stuttgart: Steiner, 1985); Roger French, “Astrology in Medical Practice,” in *Practical Medicine from Salerno to the Black Death*, ed. Luis García-Ballester et al. (Cambridge: Cambridge University Press, 1994), pp. 30–59; Monica Azzolini, *The Duke and the Stars: Astrology and Politics in Renaissance Milan* (Cambridge, MA: Harvard University Press, 2012), pp. 36–52 and 142–159.

² On Pico, see Giancarlo Zanier, “Struttura e significato delle *Disputationes pichiane*,” *Giornale critico della filosofia italiana* 60 (1981): 54–86; Steven Vanden Broecke, *The Limits of Influence: Pico, Louvain, and the Crisis of Renaissance Astrology* (Leiden: Brill, 2003),

of critical days. The immediate impact of his work can be observed in the field of medicine through the productions of such physicians as Giovanni Mainardi (1462–1536) and Girolamo Fracastoro (1478–1553), although the intense debates on critical days lasted through the 16th century.³

Another stimulus came from Florentine philosopher, Marsilio Ficino (1433–1499). Among his works there was a treatise on longevity, entitled *Three Books on Life* (*De vita libri tres*) (Florence, 1489), which attracted the considerable attention of physicians and natural philosophers. In its third and most important book *On Obtaining Life from the Heavens* (*De vita coelitus comparanda*), originally planned as part of his commentary on Plotinus's *Enneads*, 4.3.11, references to Neoplatonic philosophy and related magical and liturgical discussions are concentrated upon. Ficino understood and interpreted the teachings of Plotinus along with the line developed by later Neoplatonists such as Iamblichus and Proclus. This worldview, heavily influenced by ancient Neoplatonism, was blended with ideas borrowed from late medieval alchemy, astrology and natural magic. According to Ficino, the *magus*, having correctly mastered these teachings, can manipulate material objects in order to draw down the benefit of higher cosmic and immaterial forces through which he is united with the World-Soul (*anima mundi*). Ficino also established an influential theory of the all-pervading "World-Spirit" (*spiritus mundi*), which unites the soul of the world to its body as their bond. In this perspective the universe is conceived of as a giant living being, and the correspondence and harmony between heaven and earth as its members are emphasized.⁴

pp. 55–77; Marco Bertozzi (ed.), *Nello specchio del cielo: Giovanni Pico della Mirandola e le Disputationes contro l'astrologia divinatoria* (Florence: Olschki, 2008); H. Darrel Rutkin, "The Use and Abuse of Ptolemy's *Tetrabiblos* in Renaissance and Early Modern Europe: Two Case Studies (Pico and Fantoni)," in *Ptolemy in Perspective: Use and Criticism of his Work from Antiquity to the Nineteenth Century*, ed. Alexander Jones (Dordrecht: Springer, 2010), pp. 135–149.

³ On the doctrine of critical days, see Glen M. Cooper, *Galen, De diebus decretoriis, from Greek into Arabic: A Critical Edition with Translation and Commentary of Hunayn ibn Ishāq*, Kitāb ayyām al-Buhrān (Farnham: Ashgate, 2011). On its Renaissance reception, see Concetta Pennuto, "The Debate on Critical Days in Renaissance Italy," in *Astro-Medicine: Astrology and Medicine, East and West*, ed. Anna Akasoy et al. (Florence: Sismel, 2008), pp. 75–98; eadem, "Girolamo Mercuriale e la dottrina dei giorni critici," in *Girolamo Mercuriale: medicina e cultura nell'Europa del Cinquecento*, ed. Alessandro Arcangeli and Vivian Nutton (Florence: Olschki, 2008), pp. 301–317.

⁴ See Hiro Hirai, "Concepts of Seeds and Nature in the Work of Marsilio Ficino," in *Marsilio Ficino: His Theology, His Philosophy, His Legacy*, ed. Michael J.B. Allen and Valery Rees (Leiden: Brill, 2002), pp. 257–284; idem, *Le concept de semence dans les théories de la matière à la Renaissance: de Marsile Ficin à Pierre Gassendi* (Turnhout: Brepols, 2005), pp. 33–56.

Pico's criticism of judicial astrology and Ficino's promotion of cosmic harmony led 16th century physicians to offer theoretical innovations for a new system which can be called "astral medicine."

Leonicenso's Naturalistic Attitude

Before the publication of the first Greek edition of Galen's collected works from the Aldine press of Venice in 1525, the movement for the new translation of his writings was propelled especially by Nicolò Leonicenso (1428–1524) of Ferrara.⁵ An acquaintance of Pico and the master of Mainardi, he was influential in the reconstruction of Galen's medical philosophy. In his booklet *On Formative Power* (*De virtute formativa*) (Venice, 1506), the first humanistic work on embryology, Leonicenso tried to explain the Galenic theory of formative power for fetal formation. He also interpreted Galen's notion of the soul in a physicalistic or naturalistic way, where the soul was explicitly construed as the mixture of the qualities (hot, cold, wet and dry) of the four traditional elements (fire, air, water and earth).⁶

Leonicenso regrets that philosophers and physicians blindly follow the Arabic writers who advanced the celestial origin of formative power on the basis of a passage in Aristotle's *Generation of Animals*. The passage in question bears a particular cosmological dimension:

The faculty of all kinds of souls seems to have a connection with a body different from and more divine than the so-called elements; but as one soul differs from another in the scale of value, so differs also the nature of these bodies. In every seed there is that which renders it fertile, that is, what is called "heat." This heat is neither fire nor any such faculty but the *pneuma* which is enclosed in the seed and a foam-like body. Nature in this *pneuma* is analogous to the element of the stars. That is why fire does not generate any animal, and we find no animal taking shape in either fluids or solids

⁵ On Leonicenso, see *Dictionary of Scientific Biography* 8 (1973): 248–250; Daniela Mugnai Carrara, "Profilo di Nicolò Leonicenso," *Interpres* 2 (1979): 169–212; Vivian Nutton, "The Rise of Medical Humanism: Ferrara, 1464–1555," *Renaissance Studies* 11 (1997): 2–19; Hiro Hirai, *Medical Humanism and Natural Philosophy: Renaissance Debates on Matter, Life and the Soul* (Leiden: Brill, 2011), pp. 19–45. On the Aldine edition of Galen's corpus and its diffusion and impact, see the special issue "Printing Geek Medicine in the Renaissance," *Early Science and Medicine* 17 (2012): 371–466.

⁶ On this treatise, see Vivian Nutton, "The Anatomy of the Soul in Early Renaissance Medicine," in *The Human Embryo: Aristotle and the Arabic and European Traditions*, ed. Gordon R. Dunstan (Exeter: University of Exeter Press, 1990), pp. 136–157: 138–140, 152–153. I have used the edition of Venice (1506) and that of the *Opuscula* (Basel: 1532), fols. 83v–93r.

under the influence of fire, whereas the heat of the sun and that of animals do generate them. Not only the heat residing in the seed but also whatever other natural residue, which there may be, has within itself a vital principle too. Considerations of this sort clearly show us that the heat contained in animals neither is fire nor draws its origin from fire.⁷

Relying on this enigmatic passage, Avicenna and Averroes explained what Aristotle meant regarding the nature and origin of formative power and, among their Latin followers, Pietro d'Abano developed his singular interpretation.⁸ By contrast, Leoniceno argues that Aristotle was making no allusion to formative power but to heat contained in the seed. Moreover, for him, Aristotle did not qualify this heat to be "celestial" but merely "analogous" to the heat of heavenly bodies. Leoniceno thus denied the link that the medieval interpreters of this passage established between heaven and earth for the birth of living beings. Needless to say, this link was the theoretical basis of medical and astrological speculations on human conception or nativity. Leoniceno's hostile attitude toward astrology and his naturalistic interpretation were without doubt closely related to Pico's criticism.

Fernel's Astral Medicine

French physician Jean Fernel (1497–1558), was one of the most influential medical authors of the Renaissance.⁹ Although he devoted himself to mathematics and astronomy before turning to medicine, his famous medical work *On the Natural Part of Medicine* (*De naturali parte medicinae*) (Paris, 1542)—the most successful physiological textbook of the

⁷ Aristotle, *Generation of Animals*, 2.3, 736b33–737a7. On this passage, see Friedrich Solmsen, "The Vital Heat, the Inborn Pneuma, and the Aether," *Journal of Hellenic Studies* 77 (1957): 119–123; Gad Freudenthal, *Aristotle's Theory of Material Substance: Heat and Pneuma, Form and Soul* (Oxford: Clarendon, 1995), pp. 107–119; James G. Lennox, *Aristotle's Philosophy of Biology* (Cambridge: Cambridge University Press, 2001), pp. 229–249. On its Renaissance reception, see Hiro Hirai, "Il calore cosmico in Telesio fra il *De generatione animalium* di Aristotele e il *De carnibus* di Ippocrate," in *Bernardino Telesio tra filosofia naturale e scienza moderna*, ed. Giuliana Mocchi et al. (Roma: Serra, 2012), pp. 71–83.

⁸ Avicenna, *De animalibus*, 16.1, in *Opera philosophica* (Venice: 1508), fol. 61va; Averroes, *Commentary on Aristotle's On Animals*, 16.3 (Venice: 1562–1574), vol. 6, p. 75; Pietro d'Abano, *Conciliator*, differentia 48 (Venice: 1565), fols. 71v–72r. Cf. Gad Freudenthal, "The Medieval Astrologization of Aristotle's Biology: Averroes on the Role of the Celestial Bodies in the Generation of Animate Beings," *Arabic Sciences and Philosophy* 12 (2002): 111–137.

⁹ On Fernel, see Charles Sherrington, *The Endeavour of Jean Fernel* (Cambridge: Cambridge University Press, 1946); Hirai, *Le concept de semence*, pp. 83–103; idem, *Medical Humanism*, pp. 46–79.

Renaissance and known under its second edition's title, *Physiologia*—barely shows a trace of the traditional astrological ideas and theories which animated his early career.

For Fernel the naturalistic interpretation that medical humanists such as Leoniceno advanced for Galen's conception of the soul was a serious error. He could not accept the idea that the soul of a living being, identified as the mixture of elemental qualities, depends on the four elements and, therefore, is transient and destructible with the body. To his eyes this interpretation contradicted the Christian doctrine of the immortality of the soul, a doctrine that became central to philosophy especially after the Fifth Council of the Lateran (1512–1517). Wishing to reconcile the new Galen of the humanists with Christianity, Fernel called upon Ficinian Platonism. The chief fruit of his endeavor was the dialogue *On the Hidden Causes of Things* (*De abditis rerum causis*) (Paris, 1548).¹⁰ In this foundation of his medical philosophy, Fernel advocated the quest for the “divine” (*to theion*) in nature and in medicine, a notion evoked at the beginning of Hippocrates's treatise *Prognostic*.¹¹ By the term “divine” he signified something “super-elemental,” that is, something beyond the realm of the four elements and their forces. That is why it is qualified as “celestial.”

In the first part of the treatise, Fernel offers a particularly Platonizing image of Aristotle on the basis of Renaissance belief in the “ancient theology” (*prisca theologia*). This belief was reactivated by Ficino in order to harmonize the divergent ideas of the ancients.¹² Crucial to Fernel's own manipulation is the Pseudo-Aristotelian treatise *On the Universe* (*De mundo*). Adopting Ficino's theory of the World-Spirit, Fernel manages to establish a remarkable concordance not only between Plato and Aristotle, but also between the Greeks and the Christians. In the second part

¹⁰ I have used the second edition revised by Fernel: *Joannis Fernelii Ambiani de abditis rerum causis libri duo* (Paris: 1551) and its translation by John M. Forrester, *Jean Fernel's On the Hidden Causes of Things: Forms, Souls, and Occult Diseases in Renaissance Medicine* (Leiden: Brill, 2005).

¹¹ Hippocrates, *Prognostic*, 1 = *Œuvres complètes d'Hippocrate*, ed. Émile Littré (Paris: 1839–1861), vol. 2, p. 112. On this notion in Hippocrates, see Antoine Thivel, “Le ‘divin’ dans la *Collection hippocratique*,” in *La Collection hippocratique et son rôle dans l'histoire de la médecine* (Leiden: Brill, 1975), pp. 57–76; Robert J. Hankinson, “Magic, Religion and Science: Divine and Human in the Hippocratic Corpus,” *Apeiron* 31 (1998): 1–34.

¹² On the belief in the *prisca theologia*, see Charles B. Schmitt, “Perennial Philosophy from Agostino Steuco to Leibniz,” *Journal of the History of Ideas* 27 (1966): 505–532; Daniel P. Walker, *The Ancient Theology: Studies in Christian Platonism from the Fifteenth to the Eighteenth Century* (London: Duckworth, 1972); Wilhelm Schmidt-Biggemann, *Philosophia perennis: Historical Outlines of Western Spirituality in Ancient, Medieval and Early Modern Thought* (Dordrecht: Springer, 2004).

of the treatise, Fernel tries to incorporate Galen into this ambitious theater of harmonization. Presenting a Christian Platonic interpretation of the Greek physician, he dares to build his own Galenism mainly around questions of the soul and of God.

As for fetal formation, Fernel argues that Galen identified its cause with “a very wise and powerful force” introduced from the outside. For him although Galen tended to seek the cause of natural phenomena in the powers of the elements and of their mixture, he acknowledged the existence of a formative cause “more divine” than the forces of the elements. Deducing that this cause is placed beyond the realm of the elements, Fernel argues that Galen explained the nature of this force through a series of speculations in the concluding part of his major work *On the Usefulness of the Parts of the Body* (*De usu partium*). Its discussion is of great interest for grasping not only Fernel’s interpretation but also Galen’s cosmic theology:

Who could be such a crazy enemy and opponent of the works of nature as not to see at once right at the start, from the skin itself, the skill of the Creator? Who will not go on to reflect that some mind, endowed with marvelous power, travels through the lands and permeates all parts? For there is nowhere that creatures are not seen to be generated, creatures that all have received some remarkable structure. Of all the world’s parts, the one round the earth is surely the most unimportant and squalid, yet a mind derived from those higher bodies evidently extends to there.¹³

Fernel explains that Galen meant the Creator of everything by this cosmic mind. For him this passage clearly supports the agreement among Plato, Aristotle and Galen. Fernel then tries to show that the Greek physician called this cosmic Creator “God” (*Deus*). To this end he calls upon another passage in the same treatise, where Galen mentioned Moses.¹⁴ There Galen rejected the Christian view that God instantaneously created everything by His will alone; at the same time, he accepted the notion of one single Creator of all things. For Fernel these two opinions do not differ fundamentally, and Galen’s cosmic mind must be identified as the Creator God of the Christians.¹⁵

The next problem is Galen’s conception of the soul. Distilling some key passages from the extensive *On the Doctrines of Hippocrates and Plato* (*De*

¹³ Galen, *De usu partium*, 17.1 = Galen, *Opera omnia*, ed. Karl G. Kühn (Leipzig: 1821–1833), vol. 4, p. 358.

¹⁴ Galen, *De usu partium*, 11.14 = ed. Kühn, vol. 3, pp. 905–906.

¹⁵ Fernel, *De abditis*, 2.3, p. 92 = ed. Forrester, p. 432.

placitis Hippocratis et Platonis), Fernel reconstructs Galen's view that the soul is a simple and uniform substance, superior to the "spirit" (*pneuma*). He concludes that since the soul is superior to the spirit which is the most excellent body, the soul must be incorporeal and free of body.¹⁶

As for the origin of the soul, Fernel argues that Hippocrates proposed a divine opinion at the beginning of the treatise *On Fleashes* (*De carnibus*):

I should say nothing about heavenly and sublime things, unless to the extent that human beings and the other animals that live and are begotten on earth have their principle and origin there; and that the soul comes from heaven.¹⁷

Fernel is using a Renaissance translation that differs from the modern reading at a crucial point: "the soul comes from heaven." On this basis he argues that Hippocrates advocated the celestial origin of the soul. The soul must also be immortal since Hippocrates continued: "In my view, what we call 'heat' is immortal, perceives all, and sees, hears and knows all that is and all that will be."¹⁸ In this way Fernel calls upon a lesser-known Hippocratic passage that bears a particularly cosmological dimension due to its Latin translation.

To emphasize the celestial origin of the soul, Fernel recommends another passage of Galen that seems particularly Platonizing. In reality this passage is drawn from the Pseudo-Galenic treatise *On Uterine Conception*, better known under the title *Whether What is Carried in the Uterus is a Living Being*, probably composed under a strong Platonic influence in the second century of our era:

To remove all chance of uncertainty, please listen to what [Galen] states divinely in the book *On Uterine Conception*: "A soul is a downflow of the soul of the universe, descending from the heavenly region, capable of knowledge; it always aspires to a path like itself and to a related substance and, abandoning earthly things, always aims at the highest points of all; having a share of the heavenly divinity, and gazing quite often over the heavenly place, it takes its stand beside the governor of all things." This clearly shows that Galen's opinion has not deviated at all from the view of Plato and

¹⁶ Galen, *De placitis Hippocratis et Platonis*, 7.3 = ed. Kühn, vol. 5, pp. 606, 608, 609.

¹⁷ Cf. Hippocrates, *On Fleashes*, 1 = ed. Littré, vol. 8, p. 584: "About what is in the heavens I have no need to speak, except insofar as is necessary in order to explain how man and the other animals are formed and generated, what the soul is [...]." For his particular reading of Hippocrates, Fernel followed the Latin translation made by Marco Fabio Calvo (ca. 1440–1527), published in *Hippocratis octoginta volumina* (Rome: 1525) and in a Hippocratic collection (Paris: 1527).

¹⁸ Hippocrates, *On Fleashes*, 2 = ed. Littré, vol. 8, p. 584.

Aristotle; they have spoken with one voice in confirming that our soul is simple, incorporeal and immortal.¹⁹

The point of conjunction is the Platonic doctrine of the World-Soul, which is the quintessential core of Fernel's astral medicine.²⁰ For him something celestial stands beyond the realm of the elements and must be indestructible. The immortality of the soul is defended in agreement with Christian faith. But how can the immortal soul reside in a perishable body? For Fernel the soul does not perish, despite its attachment to the body by a certain union called "the chain of bonds" (*vinculorum nexus*). It is not the soul itself but only this chain that can be damaged. Fernel identifies these bonds with spirits and their "innate heat" (*calor innatus*). When an extreme defect of the body causes them to perish, the soul abandons the body and is set free.

Once the celestial origin and immortality of the soul is confirmed, Fernel's next step is to demonstrate the divinity of spirits in living beings on the basis of his interpretation of Galen. To this end Fernel divides spirits into three categories: 1) the spirit of God; 2) the spirit of nature; and 3) the spirits in natural beings. The spirit of God is distributed through everything and embraces all. Fernel then addresses the spirit of nature:

The spirit of nature is the one that all philosophers and poets unite to celebrate, the one that Plato called "World-Soul" (*animus mundi*) and Galen called "mind derived from those higher bodies"; the one that Aristotle in his discourse on the world defined more explicitly thus: "Spirit is the name of a substance in both plants and animals, an animate and fertile substance penetrating everything." Dispersed far and wide, it embraces everything, it cheers everything, carrying along with it the vital soul of the world, and nature itself; it renders vital everything into which it has extended.²¹

Fernel tries to show that Galen is well accompanied by Plato and Aristotle on the notion of the spirit of nature. This harmonization is built on the amalgam of the Platonic doctrine of the World-Soul and the Stoic theory

¹⁹ Fernel, *De abditis*, 2.4, p. 98 = ed. Forrester, pp. 450–452. Cf. Ps.-Galen, *An animal id, quod in utero est*, 4 = ed. Kühn, vol. 19, pp. 171–172. See also Konstantinos Kapparis, *Abortion in the Ancient World* (London, 2002), pp. 201–213.

²⁰ On the World-Soul in the Renaissance, see Hiro Hirai, "L'âme du monde chez Juste Lipse entre théologie cosmique romaine et *prisca theologia* renaissante," *Revue des sciences philosophiques et théologiques* 93 (2009): 251–273; idem, "Justus Lipsius on the World-Soul between Roman Cosmic Theology and Renaissance *Prisca Theologia*," in *Justus Lipsius and Natural Philosophy*, ed. Hiro Hirai and Jan Papy (Brussels: Royal Academy of Belgium, 2011), pp. 63–79.

²¹ Fernel, *De abditis*, 2.7, p. 107 = ed. Forrester, pp. 478–480.

of the divine *pneuma* pervading everything, a theory whose echo is found in the Pseudo-Aristotelian *De mundo*.²²

After this concordance of the ancients as to the superior kinds of spirit, Fernel turns to the inferior one. For him the spirits of each particular, mortal and concrete being are subject to the soul; they tie the soul to the body, while keeping the intermediate status between the two. Significantly, inferior spirits are governed by and united to the superior spirit of nature. Clearly inspired by that enigmatic passage in Aristotle's *Generation of Animals*, Fernel then argues that both spirits and their heat are divine. For him the nature of this heat has a more excellent and divine character than spirits themselves. But why is the nature of this heat celestial? Can anything celestial exist in the body? Precisely here, notes Fernel, many people erroneously claim that anything celestial is external to the human body. Indeed living beings at death must lose the cause of their functions of life. For Fernel it is the innate heat of spirits that is extinguished. This heat must thus bear a super-elemental nature as the author of life's functions or of life itself. Fernel goes even further to compare it with the light and heat of the sun or with any force derived from heaven into a natural body.

After all these discussions Fernel explains what he understands by the term "divine." Following Aristotle's words, he defines it as "anything that corresponds to the element of the stars." This special element must be the fifth element, the incorruptible and eternal *aether* of Aristotle. For Fernel this *aether* provides the soul's faculties and spirits in natural living beings, and determines their form. The indispensable instruments of his physiological system, built on a singular interpretation of Galen, are supported again by this Platonizing reading of Aristotle. In this particular reading, Fernel repeatedly appeals to the cosmological passage of his *Generation of Animals*. This passage becomes a symbol of Renaissance astral medicine.

Mizauld's Harmony between Heaven and Earth

A disciple of Fernel, Antoine Mizauld (ca. 1512–1578) went beyond his master by reinforcing the idea of harmony between heaven and earth in medicine. Among his writings let us focus here upon the *Medical and Astronomical Union from the Conversation of Asclepius and Urania* (*Aesculapii*

²² Ps.-Aristotle, *De mundo*, 4, 394b9–11.

et Uraniae medicum et astronomicum ex colloquio conjugium) (Lyon, 1550).²³ In this dialogue between Asclepius the medical god and Urania the celestial goddess, Mizauld developed the theoretical foundations of his astral medicine and mentions various authorities: Galen and Hippocrates for medicine, Ptolemy and Julius Firmicus for astronomy and astrology, Plato and Proclus for Platonism. However, the most important authority is Hermes Trismegistus. According to Mizauld, this mythical figure lived a short time after Moses, and even Galen learned much from his writings. Needless to say, this was a view based on the *prisca theologia* belief of the Renaissance. Fernel was doubtless his major inspiration for the choice of this direction.

In the beginning of the treatise, Asclepius's uncle, Mercury, calls celestial gods to an assembly. In this assembly, Jupiter proposes to send Asclepius to the earth in order to investigate the sicknesses that are tormenting human beings. Urania and Asclepius agree to make the journey together and, on their way, elaborate eleven dialogues on the harmony between the heavens and humankind. First Urania quotes Galen's praise of the Creator expressed in *On the Usefulness of the Parts of the Body*:

Then do not wonder so greatly at the beautiful arrangement of the sun, moon and the whole chorus of stars, and do not be so struck with amazement at the size of them, their beauty, ceaseless motion and ordered revolutions that things here on earth will seem trivial and disorganized in comparison; for here too you will find displayed the same wisdom, power and foresight [...]. You should rather estimate the art of the Creator of all things [...]. For [the sun and the moon] are divine and celestial and we are mere figures of clay, but in both cases the art of the Creator is equally great.²⁴

To Mizauld Galen's words signify that the body of the human being bears a certain resemblance to celestial bodies and its contemplation leads to the discovery of its accord with heaven. That is why, he says, all the ancients celebrated the human being as a microcosm. Then he proceeds to explain celestial matters (via Urania) and their counterparts in the human body (via Asclepius).

²³ Antoine Mizauld, *Aesculapii et Uraniae medicum et astronomicum ex colloquio conjugium* (Lyon, 1550), hereafter indicated as *Conjugium*. On Mizauld, see Jean Dupèbe, *Médecine, astrologie et religion à Paris: Antoine Mizauld (ca. 1512–1578)*, Ph.D. diss. (Paris: Université de Paris X, 1999); Hiro Hirai, "Medicine and Astrology in Antoine Mizauld's *Conversations between Urania and Asclepius* (1550)," read at the annual meeting of the Renaissance Society of America (Venice, 8–10 April 2010).

²⁴ Galen, *De usu partium*, 3.10 = ed. Kühn, vol. 3, pp. 238–241.

Upon Urania's request to explain the generation of human beings, Asclepius gives a "common" view of physicians and philosophers. According to this, there is first a "certain craftsman-like spirit" (*opifex quidam spiritus*) of divine and celestial origin in fetal formation. This spirit is fully ethereal and much resembles a celestial body. It nourishes and gives form to the fetus by procreating the parts of its body in adequate proportions. This spirit imprints on the fetus a "living image" (*viva imago*) of heaven in the form of celestial sparks. That is why the human being can be regarded as a portrait of the celestial theater. This ethereal spirit holds the key to grasping the origin of affinity between heaven and human beings. Urania counters Asclepius that she recognizes in human generation the providence of God since everything, transmitted from heaven through this formative spirit, is under God's control. She argues that Galen shared the same opinion.²⁵ The Christianized image of Galen hints at the influence of Fernel.

The second dialogue addresses the harmony of the sun and the heavens with the rational soul and the body of the human being. Urania begins the discussion by specifying the role of the Creator. For her, God is the Creator of all heavenly bodies. Moses and the Platonists are called upon to confirm this. Asclepius replies that God is also the author of the rational soul and the human body. To Urania, what governs the sun and the other celestial bodies is incorporeal since it is the divine, immortal and indivisible mind. Likewise, to Asclepius what governs the rational soul and the human body is also incorporeal since it is the divine spirit of the celestial Father. Mizauld appeals to the authority of Hermes for this development. Then he argues through Urania that the sun is the ray of the divine mind and occupies the preeminent place in heaven above all creatures by fostering them through its vivifying spiracle. Asclepius answers:

Almost similarly, the mind, that is, the immortal rational soul in the human body, is a very excellent representation of the sun, which the Platonists somewhere called "World-Soul" although it is invisible.²⁶

Thus the Platonic doctrine of the World-Soul plays as important a role in Mizauld's system as in Fernel's, and the sun is regarded as its visual representation.

²⁵ Mizauld, *Conjungium*, 1, pp. 31–36.

²⁶ *Ibid.*, 2, p. 39.

The third dialogue compares the sun's rays and spirits with physiological spirits in the human body. Urania first characterizes the sun's rays, sometimes called "the spirit and soul of the world," as substances of a bright, subtle and tenuous nature, fully celestial and ethereal, resulting from the sun's body. Asclepius opposes physiological spirits as their counterparts in the human body. These spirits are diffused everywhere in the body as certain solar rays. Their substance is wholly ethereal, subtle and bright.²⁷

Let us move on to the sixth dialogue, which compares the sun's natural heat with the native heat of the human body. Asclepius argues that from this native heat flows not only spirit but also a hidden ethereal light that illuminates and cherishes all the parts of the body. This heat is said to be of a celestial and ethereal nature adequate to preserve the human body. Then Mizauld introduces a vehicle of this heat:

The Platonists, who followed Hippocrates, and Galen with them called it "fire" or "heat" and "divine spiracle." The Peripatetics called it sometimes "heat" and "natural heat" or "the bond between the soul and the body," and also "spirit" by imitating my Hippocrates.²⁸

It is striking that the Platonists are conceived by Mizauld as Hippocrates's disciples. He goes even further to argue that Galen called native heat and its spirit something divine, the author of all natural operations, the soul or its first instrument and a certain offshoot of celestial fire. Following this, Mizauld makes allusion to the cosmological passage of Aristotle's *Generation of Animals*: "[innate heat is] something corresponding to the element of the stars. The sun presides over it."²⁹

The sun's preeminence is confirmed in the seventh dialogue on the comparison of the sun to the heart. After the discussions on its rays and spirits, the sun itself now occupies the central place. Under the authority of Dionysius the Areopagite, Urania presents the sun as the transparent image of God. Asclepius counters:

The heart is the noblest part of everything in the body and is secretly associated by marriage with the sun, the prince [of the heavens], also called "the heart of heaven" by the ancients.³⁰

²⁷ Ibid., 3, pp. 41–46.

²⁸ Ibid., 6, pp. 58–59.

²⁹ Ibid., 6, pp. 60–61.

³⁰ Ibid., 7, p. 67.

What is remarkable in Mizauld is this “heliocentrism” before the diffusion of the Copernican system. Evidently, he does not refer to the Polish astronomer or anything related to his ideas of the new world system. Rather, Mizauld’s “heliocentrism,” together with “cardiocentrism,” must be understood in the context of Renaissance Platonism where the pre-eminence of the sun was firmly established.³¹

Cardano’s Theory of Cosmic Heat

Another crucial element for the further evolution of Renaissance astral medicine was presented by Girolamo Cardano (1501–1576) of Milan.³² He is known for his reform of astrology through his commentary on Ptolemy’s *Tetrabiblos* and related works on horoscopes. In his eyes, medical prognosis has a common basis with divination and, therefore, is intimately related to astrology and prophecy. He also believed that Hippocrates was a precursor to these aspects of medicine.

In his successful work *On Subtlety* (*De subtilitate*) (Nuremberg, 1550), Cardano calls upon the authority of Hippocrates to explain his pan-vitalistic view of the universe. There he establishes a synthesis of two eminent ideas. One is the opinion attributed to Hippocrates, the other stems from that cosmological passage of Aristotle’s *Generation of Animals*:

[...] it is evident that Hippocrates correctly said: the soul is nothing but that celestial heat. This also corresponds well to the opinion of Aristotle since he wants the spirit’s heat to have a certain analogy with the element of the stars. Indeed whether the heat is the soul or its first instrument, wherever there is this [kind of] heat, it is evident that the soul itself should also be

³¹ On Renaissance perceptions of the sun in general, see *Le soleil à la Renaissance: science et mythes* (Brussels: PUB, 1965); Hirai, “Justus Lipsius on the World-Soul,” pp. 74–75. On the analogy between the sun and the heart in the Middle Ages, see Thomas Ricklin, “Le cœur, soleil du corps: une redécouverte symbolique du XII^e siècle,” *Micrologus* 11 (2003): 123–143.

³² On Cardano’s medicine and astrology, see Anthony Grafton, *Cardano’s Cosmos: The Worlds and Works of a Renaissance Astrologer* (Cambridge, MA: Harvard University Press, 1999); Nancy G. Siraisi, *The Clock and the Mirror: Girolamo Cardano and Renaissance Medicine* (Princeton: Princeton University Press, 1997); Anthony Grafton and Nancy G. Siraisi, “Between the Election and My Hopes: Girolamo Cardano and Medical Astrology,” in *Secrets of Nature: Astrology and Alchemy in Early Modern Europe*, ed. William R. Newman and Anthony Grafton (Cambridge, MA: MIT Press, 2001), pp. 69–131.

present; therefore [there should be] life too. For life is nothing but the work of the soul.³³

Cardano's source for this Hippocratic idea is *On Fleshes*, which suggested the cosmological dimension of the soul's origin. As we have seen, Fernel used the same passage to defend the immortality of the soul and its celestial origin. In other writings Cardano goes even further by arguing that this cosmic heat is animate and endowed with intelligence. Thanks to this all-pervading heat, analogous to the World-Soul or its physical manifestation, the omnipresence of the soul is guaranteed in the universe.³⁴

An even more important passage, which could be widely diffused in the medical milieu, is surely found in his commentary (Basel, 1564) on the central textbook of the traditional medical curriculum, Hippocrates's *Aphorisms*. In the preface to its seventh and last book, Cardano sums up the global view of the Hippocratic corpus. According to him, the natural philosophy of Hippocrates teaches the origin and immortality of all things, the three elements as well as cosmic heat:

In his natural philosophy, [Hippocrates] proposed five goals, the first [of which] was to discuss the origins of all things, and he showed it in the first book of *On Regime* (*De diaeta*). That is what we also declared [elsewhere]: Nothing is corrupted or destroyed but all persists; three [remain] because they are elements, that is, earth, water and air, yet being divided and separated [from each other]; but one [entity] is totally immortal that he calls "fire," "heat" or "heaven," about which he clearly teaches in the book *On Fleshes* (*De carnibus*) [...]. It is evident enough from this that we agreed with him on the elements' number and substance (although we did not then know these things) as well as on the quality of heaven.³⁵

Hippocrates is presented by Cardano as an ancient sage who knew and taught the very secret of the original constitution of the world and of the soul, especially through his treatises such as *On Regimen* and *On Fleshes*. Through this particular philosophical reading of Hippocrates, Cardano

³³ Girolamo Cardano, *De subtilitate* (Nuremberg: 1550), 5 pp. 325–326 = Girolamo Cardano, *De subtilitate*, ed. Elio Nenci (Milan: FrancoAngeli, 2004), pp. 451–452. Cf. Massimo Luigi Bianchi, "Scholastische Motive im ersten und zweiten Buch des *De subtilitate* Girolamo Cardanos," in *Cardano: Philosoph, Naturforscher, Arzt*, ed. Eckhard Kessler (Wiesbaden: Harrassowitz, 1994), pp. 115–130; Martin Mulsow, *Frühneuzeitliche Selbsterhaltung: Telesio und die Naturphilosophie der Renaissance* (Tübingen: Niemeyer, 1998), pp. 207–213.

³⁴ See Hirai, *Medical Humanism*, pp. 112–113. Cf. Girolamo Cardano, *Contradictiones*, 6.10, in idem, *Opera* (Lyon: 1663), vol. 6, p. 764.

³⁵ Girolamo Cardano, *In septem Aphorismorum Hippocratis particulas commentaria* (Basel, 1564), col. 737 = Girolamo Cardano, *Opera omnia* (Lyon: 1663), vol. 8, p. 523.

developed his theory of cosmic heat as an equivalent of the World-Soul or its physical manifestation. This was to become a central tenet of astral medicine in the second half of the 16th century.

Gemma and the Apogee of Astral Medicine

Cornelius Gemma (1535–1578), royal professor of medicine at the University of Louvain, was a friend of Mizauld and a son of the famous cosmographer-mathematician Gemma Frisius (1508–1555). Cornelius grew up in a particular environment where mathematical and astronomical sciences were part of the family business.³⁶ Unlike his father, he was heavily influenced by Ficinian Platonism. He also called upon the authority of Hippocrates on many occasions in his major work *On the Divine Signs of Nature* (*De naturae divinis characterismis*) (Antwerp, 1575). He believed that the Greek physician was a leading figure among the ancient sages. In support of this conviction, Gemma developed a particular interpretation of Hippocrates on the basis of the *prisca theologia* belief in vogue among his contemporaries. His approach was also influenced by the views of two leading physicians of the time, Fernel and Cardano.

The Hippocratic treatise *On Regimen* plays a central role in Gemma's philosophical, or more precisely Neoplatonic, reading of the Greek physician as in the case of Cardano. Gemma calls this treatise "the divine book" in his early work *On Cyclognomic Art* (*De arte cyclognomica*) (Antwerp, 1569) and closely relates it to *On Fleshes*. Like Cardano, he explains that Hippocrates advanced in *On Fleshes* the idea of cosmic heat, which is animate and endowed with intelligence. As for the structure of the world, Gemma's discussion revolves around the Ficinian notion of the universally pervading World-Spirit. Then, alluding to the cosmological passage of Aristotle's *Generation of Animals*, he says:

Above quality, I place the spirit which, in my opinion as well as according to the view of Hippocrates in the books *On Regimen* and *On Fleshes*, does not really differ from innate heat, just as that universal spirit of the world

³⁶ On his life and work, see Ferdinand Van Ortroy, *Bio-Bibliographie de Gemma Frisius, fondateur de l'école belge de géographie, de son fils Corneille et de ses neveux les Arsenius* (Brussels: Académie royale de Belgique, 1920); Tabitta Van Nouhuys, *The Age of Two-Faced Janus: The Comets of 1577 and 1618 and the Decline of the Aristotelian World View in the Netherlands* (Leiden: Brill, 1998); Vanden Broecke, *The Limits of Influence*, pp. 186–196, 212–226; Hiro Hirai (ed.), *Cornelius Gemma: Cosmology, Medicine and Natural Philosophy in Renaissance Louvain* (Rome: Serra, 2008).

does not differ from the element of the stars. Many people often speak of it, but very few [of them] really understand it. Here the former kind of spirit is the first instrument of a future form or soul. It connects the form to bodies as the spirit is tied to these bodies by a carrier quality that intervenes. It is the same spirit as that which perfects, connects, sees and understands everything according to Hippocrates.³⁷

This argument is based on the combination between Aristotle's idea on the heat of the spirit contained in the seed and that of Hippocrates on animate cosmic heat. This is exactly the same combination established by Cardano in his *De subtilitate*.

Let us return to Gemma's major work *On the Divine Signs of Nature*. Following in the footsteps of Fernel, he first appeals to the notion of the "divine" among the ancients to explain his astral medicine. To his eyes this medical principle is important not only for the remedy of mind and body but also for the restoration of health in human beings and in human society itself. Then Gemma acknowledges seven degrees of divinity in the universe, the first of which resides in matter and the second in the forms of mixed bodies. The third degree, more important than the previous two, is situated in the spirit:

Indeed the spirit is the knot and tie of opposites and, by the kinship of its nature, looks at both sides to the same degree. So it is not surprising if it connects the soul with the body in a human being, celestial force with sublunary things in the exterior sphere, corporeal faculties with incorporeal faculties in both realms [...]. Since [the spirit] belongs to all, draws all through all, composing very different things into one species by the perpetual change of contrary movements (that is, attraction, repulsion or self-rotation), Hippocrates, more than divine, attributes this triple motion to the [spirit] by really subtle signs in the first book of *On Regimen* [...].³⁸

For Gemma just as for the other followers of Ficino, spirit is a universal knot of all natural beings as well as an indispensable pillar in the structure of the universe and of human beings. Here again, what is most striking in Gemma's discourse is the appeal to Hippocrates's *On Regimen*, which occupies for him a fundamental place to explain the nature of the spirit.

Next Gemma places Hippocrates beside Hermes and the Platonists who, to his eyes, form one and the same school in the quest for divinity in nature and in the universe. He does not conceive the Greek physician as an ordinary member of those "ancient theologians" (*prisci theologi*)

³⁷ Cornelius Gemma, *De arte cyclognomica* (Antwerp: 1569), 2.3, p. 42.

³⁸ Cornelius Gemma, *De naturae divinis characterismis* (Antwerp: 1575), 1.2, p. 31.

but rather as a main figure among them. By placing Hippocrates beside Philo and Moses, Gemma goes even further to prepare the ultimate harmony between the Greeks and the Christians. For him what Hippocrates called “fire” and “water” in *On Regimen* corresponds to what Moses called “heaven” and “earth” in *Genesis*!³⁹ Thus an extraordinary ascension of the status of *On Regimen* can be observed in Gemma. Indeed for him this Hippocratic treatise occupies a central and privileged place: equivalent to holy literature such as Hermes’s *Pimander* and Plato’s *Timaeus* and close to Moses’s *Genesis*. With Gemma, Renaissance astral medicine may have reached its apogee.

The Paracelsian Quest for the Universal Medicine

Once the philosophical foundation of astral medicine was established, the next step was the search for its application in other medical fields such as pathology, therapy, medication and pharmacology. However, traditional pharmacology and therapeutic theories based on the Arabo-Latin stream of Galenic medicine did not adapt. Something suitable for this new setting was required. This was carried out by the Paracelsian “chymical” (alchemical/chemical) philosophers of the turn of the 16th and 17th centuries.⁴⁰

Although Paracelsus (ca. 1493–1541) himself shared a similar worldview with Ficino, Fernel and Cardano, his denial of the Pagan classical authorities forced him to develop a radical medical philosophy and to seek a field of activity outside the traditional academic system.⁴¹ In the manifesto of

³⁹ Gemma, *De naturae divinis characterismis*, 1.4, p. 64. Cf. Hippocrates, *On Regimen*, 1.3–7 = ed. Littré, vol. 6, pp. 472–476; *Genesis*, 1.1.

⁴⁰ On Paracelsianism, see among others Allen G. Debus, *The Chemical Philosophy: Paracelsian Science and Medicine in the Sixteenth and Seventeenth Centuries* (New York: Science History Publications, 1977); Didier Kahn, *Alchimie et paracelsisme en France à la fin de la Renaissance (1567–1625)* (Geneva: Droz, 2007). I have adopted the term “chymistry” to avoid any arbitrary distinction between chemistry and alchemy since such a divide did not exist in that period. See William R. Newman and Lawrence M. Principe, “Alchemy vs. Chemistry: The Etymological Origins of a Historiographic Mistake,” *Early Science and Medicine* 3 (1998): 32–65.

⁴¹ On Paracelsus, see Walter Pagel, *Paracelsus: An Introduction to Philosophical Medicine in the Era of the Renaissance* (Basel: Karger, 1958); Massimo Luigi Bianchi, “The Visible and the Invisible from Alchemy to Paracelsus,” in *Alchemy and Chemistry in the 16th and 17th Centuries*, ed. Piyo Rattansi and Antonio Clericuzio (Dordrecht: Kluwer, 1994), pp. 17–50; Hirai, *Le concept*, pp. 179–216; Charles Webster, *Paracelsus: Magic, Medicine and Mission at the End of Time* (New Haven: Yale University Press, 2008).

his new medicine, *Paragranum* (written ca. 1529/30), “astronomy” was one of its four pillars. By the term “astronomy,” he sought to establish a new overall harmony between heaven and earth. He also borrowed many ideas and terms from late medieval Lullian alchemy. Among these there was the notion of “quintessence” (*quinta essentia*), according to which something celestial was enclosed in terrestrial things. From this notion Paracelsus developed the idea of *arcanum*, the invisible quintessential core of natural things that, once liberated from their visible material cover or vestments, exerts marvelous medicinal power.⁴² This idea was to culminate in the theory of the universal medicine toward the end of the Renaissance.

Let us look at the case of Joseph Du Chesne (1546–1609) *alias* Quercetanus, who was one of Paracelsus’s most prominent followers during this period. In his treatise *For the Truth of Hermetic Medicine* (*Ad veritatem Hermeticae medicinae*) (Paris, 1604), Du Chesne devoted himself to the quest for the universal medicine.⁴³ There he divides natural bodies into two kinds: simple and composite. The simple bodies are subdivided into two groups: formal and material. The formal simple bodies are all active, invisible and spiritual entities. Du Chesne acknowledges three categories among them: 1) elements; 2) three Paracelsian principles of Salt, Sulfur and Mercury; and 3) astral “seeds” (*semina*). There is a clear hierarchy among these categories. The first rank is attributed to astral seeds, which activate the three principles. Because of these principles, the elements too are seen as formal and active entities although they are by nature nearly inert with only passive qualities. Significantly, these formal bodies can still be considered “material” upon receiving their own material cover or vestment. With this cover they become perceptible, even visible. Every natural being thus has a double nature: one visible and material, the other invisible and spiritual.

Although Du Chesne denies the possibility of capturing astral seeds separately through the chymical dissolution of natural bodies, he thinks it possible to obtain the hidden body of the three principles, which can be regarded as their receptacle or vehicle. This is the real identity of quintessence for him:

⁴² Paracelsus, *Paragranum*, 3 = Paracelsus, *Sämtliche Werke: 1. Abteilung*, ed. Karl Sudhoff (Berlin-Munich, 1922–1933), vol. 8, pp. 187–188. Cf. Hirai, *Le concept*, pp. 198–199.

⁴³ On Du Chesne, see Hirai, *Le concept*, pp. 267–294; idem, “The World-Spirit and Quintessence in the Chymical Philosophy of Joseph Du Chesne,” in *Chymia: Science and Nature in Early Modern Europe (1450–1750)*, ed. Miguel Lopez et al. (Cambridge: Cambridge Scholars, 2010), 247–261.

The artist not only can separate these elemental bodies but also can reduce them into nothing so that, once the passive and material elements are separated, those three hypostatical, formal and active principles remain. Contracted into one [entity], these [principles] form a mixed body which philosophers call “quintessence” [...]. This [essence] is free of corruption and rich in perfection and life-giving spirits.⁴⁴

For Du Chesne this celestial essence constitutes the body of heaven, which is endowed with powers to generate, foster and perfect sublunary things. By its supreme subtlety and purity, this heavenly essence permeates all natural beings and bestows on them their own specific virtues. In such a manner heaven fashions all sublunary beings.

Upon materializing the heavenly essence that holds the secret of life, the quest for the universal medicine seems like a real possibility to Du Chesne. He argues that the true medical philosopher must eliminate the material cover by distillation to obtain this essence crucial to the preservation of health and life. He goes even further to call it “the celestial stone of philosophers” (*lapis caelestis philosophorum*), an idea against which his anonymous detractor reacted violently.⁴⁵ Du Chesne responds:

As it is very simple, pure and incorruptible, [the universal medicine] is called “quintessence” [...] and “the celestial stone of philosophers.” Since that anonymous author did not have any knowledge of this [entity], he misunderstood that, speaking of the stone of philosophers, that is, this universal medicine, I was thinking of the transmutation of metals as if such a transmutation were the supreme medicine of the human body. He was also ignorant of the fact that in the microcosmic human being lie hidden the mines of imperfect metals from which many diseases are propagated; necessarily a good, pious and wise doctor should reduce them into gold and silver, that is, the perfect purification through the virtue of that very remarkable and precious medicine if we want to reach sanity and good health [...].⁴⁶

After establishing the existence of the universal medicine, Du Chesne tries to explain its origin through the interpretation of the Creation story of *Genesis* in chymical terms especially used for distillation. His *modus operandi* is to demonstrate, on the basis of *prisca theologia* belief, the

⁴⁴ Joseph Du Chesne, *Ad veritatem Hermeticae medicinae* (Paris, 1604), 1.14, p. 172.

⁴⁵ This detractor was Jean Riolan the elder (1537–1605), dean of the faculty of medicine at Paris, who anonymously published his censure as *Apologia pro Hippocratis et Galeni medicina adversus Quercetani librum* (Paris, 1603). On their polemic, see Kahn, *Alchimie et Paracelsisme*, pp. 363–386; Hiro Hirai, “Alchemy and Medicine in Joseph Du Chesne's *De priscorum materia* (1603),” read at the international conference *Alchemy and Medicine from Antiquity to the Enlightenment* (Cambridge, 22–24 September 2011).

⁴⁶ Du Chesne, *Ad veritatem*, 1.14, p. 178.

concordance of ancients such as Plato and Aristotle with the “Hermetists,” that is, the chymical philosophers under the authority of the Bible. For Du Chesne the knowledge of the Hermetists is in total agreement with the true philosophy of Moses who, hearing the words of God, recorded them in the book of *Genesis*.⁴⁷

Following in the footsteps of Du Chesne, 17th century Paracelsian chymists such as Oswald Croll (ca. 1560–1608) and Robert Fludd (1574–1637) produced the most celebrated works of the Paracelsian movement, where the chymical interpretation of *Genesis* and the quest for the universal medicine were crucial.⁴⁸ Needless to say, this was a natural development of Renaissance astral medicine.

⁴⁷ On the interpretation of *Genesis* in chymical philosophy, see Hirai, *Le concept*, pp. 201–206, 292–293, 446–450; idem, “Athanasius Kircher’s Chymical Interpretation of the Creation and Spontaneous Generation,” in *Chymists and Chymistry: Studies in the History of Alchemy and Early Modern Chemistry*, ed. Lawrence M. Principe (New York: Science History Publications, 2007), pp. 77–87.

⁴⁸ Oswald Croll, *Basilica chymica continens philosophicam propria laborum experientia confirmatam descriptionem et usum remediorum chymicorum selectissimorum e lumine gratiae et naturae desumptorum* (Frankfurt, 1609); Robert Fludd, *Utriusque cosmi, maioris scilicet et minoris, metaphysica, physica atque technica historia* (Frankfurt, 1617–1621). On Croll, see Oswald Croll, *De signaturis internis rerum: Die lateinische Editio princeps* (1609) und die deutsche Erstübersetzung (1623), ed. Wilhelm Kühlmann and Joachim Telle (Stuttgart: Steiner, 1996); idem, *Alchemomedizinische Briefe 1585 bis 1597*, ed. Wilhelm Kühlmann and Joachim Telle (Stuttgart: Steiner, 1998); Hirai, *Le concept*, pp. 295–323. On Fludd, see Debus, *The Chemical Philosophy*, pp. 205–293; William H. Huffman, *Robert Fludd and the End of the Renaissance* (London: Routledge, 1988).

CHAPTER NINE

ASTROLOGY AND LITERATURE

Eileen Reeves

This chapter has as its focus the use and abuse of the astrologer in literature of the 16th and 17th centuries. It examines in detail a few genre-specific depictions of the astrologer in short stories, verse, news writings, drama, and the novel, and will argue that the astrologer was readily reviled in this context because he was understood as the rivalrous double of the writer himself. Put differently, while the increasing strictures surrounding the practice of judicial astrology, and the growing divergence between the tasks of the astronomer and those of the astrologer, both served to erode the authority of this figure, the writer recognized and contested his cultural prestige.

The differences between the literary genres themselves, moreover, allowed for a flexible and nuanced treatment of the astrologer. Though the short humorous tale would seize upon the learned stargazer as a convenient target, its suggested privileging of a plainspoken vernacular knowledge over classical erudition was inevitably an inside joke celebrating the durability, rather than the demise, of the astrometerological tradition of Theophrastus, Virgil, and Aratus. Not surprisingly, too, early modern poets could at once denounce the vulgar appeal of the astrologer and gesture more covertly to a shared set of rhetorical strategies. For both news-writers and observers of an emergent journalistic network, a muttering prognosticator often sat at the origin of events of pan-European importance, figuring as the index of the incident's magnitude and of the presumed transition from oral to print culture. The significance of the dramaturge's perennial mockery of the fraudulent astrologer—a venial character so given to trickery that serious scrutiny of the discipline is beside the point—lies in their mutual reliance on a pleasurable and profitable illusion. The long-term survival of the suitably disguised astrologer, finally, is captured in that relative latecomer to the literary landscape, the novel.

The Asinine Astrologer

"Who dares to call the Sun a liar?" Thus Virgil ends his discussion of weather signs in the first book of the *Georgics*, and begins a dramatic exposition of the sorts of celestial omens that signal political unrest and civil war. Though sutured by this verse, the two presentations are strikingly different in kind. The weather lore, imparted with a reassuring tone of untroubled rusticity, follows on astronomical indications of the appropriate seasons for planting and for harvesting, and offers signs of approaching storms taken from rustling trees, sniffing calves, a spotted sun and pale moon, croaking frogs, and sputtering candles. The grave omens of tumult threaten to sweep away that entire world, and the familiar signs of bad weather are converted into their sinister analogues, the echoing woods, speaking cattle, eclipsed sun, dire comets, howling dogs, and weeping statues of a very recent past, the assassination of Julius Caesar and the ensuing civil strife.

The extremes of the eternal quotidian of the Virgilian farmer and of the particular historical moment of the *Georgics* were durably linked by the practice of astrometeorology. Thus while in an opening chapter of the *Tetrabiblos* Ptolemy had presented weather lore as a much less sophisticated and only passably accurate version of the complex science of the stars to which his work was devoted, he also emphasized the common origin of all such signs, and their shared goal of prognostication. The particular relationship of celestial events to weather patterns would be debated, without resolution, from Antiquity through the early modern period, with some suggesting a strong causal connection between astronomical activity and terrestrial effect, and others arguing instead for a convenient temporal correlation, such that a given constellation merely indicated the approach of summer.¹

The heyday of astrometeorological literature in the 16th century was facilitated by the fact that prognostications based on these weather signs generally escaped from the ecclesiastical and civil censorship that

¹ On the various treatments of this question, see Liba Taub, *Ancient Meteorology* (London: 2003), pp. 15–69, especially 36–40, 59–63; on the distinction between meteorology, particularly as an Aristotelian science, and astrometeorology in the early modern period, see Craig Martin, *Renaissance Meteorology: Pomponazzi to Descartes* (Baltimore, MD: 2011) pp. 5–14, 23–26.

restricted other divinatory practices.² The extraordinary cultural prominence of Virgil's *Georgics*, as well as of Aratus' *Phaenomena*, likewise promoted and protected this aspect of astrology;³ thus even the most rigorously studied object of early modern astronomy, sunspots, were considered short-term indicators of coming storms by at least three of their first telescopic observers, precisely because they had been presented in that fashion in classical meteorology.⁴ As if to insist on the seamless task of sign-reading, without pausing to consider the nature of those signals, in his *Prognostication Everlasting*, repeatedly published between the mid-16th and early 17th centuries, the Englishman Leonard Digges moved briskly from a catalogue of rural vignettes taken from the first book of the *Georgics* to a spirited defense of the "Meteoroscooper," who "learned in matters Astronomically," "liketh ingenuously to prognosticate of weather," before turning to a discussion of the importance of rarer omens and to a systematic exposition of the calendar.⁵

The particular grouping that aligned weather signs with alterations in the political, economic, and social life of a region was described by Albertus Magnus as "revolutions" and was distinguished from three other sorts of astrological study, those involving nativities or birth horoscopes, interrogations or particular questions designed to elicit information about

² On the development of this literature in France, see Danielle Le Prado-Madaule, "L'Astrométéorologie: Influence et Evolution en France 1520-1640," *Histoire Economie et Société* 15.2 (1996): 179-201; on restrictions, see pp. 182, 190.

³ On the prominence of Virgil in late medieval and early modern education, see Andrew Pettegree, *The Book in the Renaissance* (New Haven, CT: 2010), pp. 182-183; on the Latin and vernacular translations of Aratus' *Phaenomena* as a "literary rite of passage," see Aratus, *Phaenomena*, trans. with an introduction and notes by Aaron Poochigian (Baltimore, MD: 2010), pp. xxiii-xxvii.

⁴ Christoph Scheiner SJ in his *Accuratio Disquisitio* raised no objection to the deployment of sunspots for the prediction of bad weather; see *Accuratio Disquisitio* in Galileo Galilei, *Opere*, vol. 5, Antonio Favaro, ed., (Florence: 1967), p. 69. In 1614, Giovanni Battista Baliani, basing his suggestion closely on Virgil, *Georgics*, lib. I, 438-457, which ends on a cautionary note for sea-goers, proposed that sunspots would be useful in predicting weather for mariners; Giovanni Battista Baliani, "To Galileo Galilei," January 31, 1614, in Galilei, *Opere*, vol. 12: 19-22, 44 and "to Galileo Galilei," April 4, 1614, in Galilei, *Opere* 12: 44-45. Fortunio Liceti, writing in 1622, reported that one of the earliest observers of sunspots, Vincenzo de' Dotti, whose study of the phenomena dated at least to November 1611, had noticed after "many years" of observation that large and numerous sunspots always warned of the approach of rain, cloudy skies, or tempests, while few or no spots signaled fine weather. See Galilei, *Opere*, vol. 11, 230-231, 244, and Fortunio Liceti, *De novis astris et cometis aethereis* (Venice: 1622), p. 35.

⁵ Leonard Digges, *A Prognostication Everlasting of Right Good Effect* (London: 1596), p. 7.

an individual's choices, and elections, which indicated when best to undertake crucial civic enterprises, and was often combined with discussions of talismanic images.⁶ While nativities, interrogations, and elections were, to be sure, addressed in literary depictions of the astrologer, the tensions within the category of revolutions, and its ready division into high and low forms of prognostication, seem to have allowed for especially vivid exploitation within the genre of the prose anecdote.

A typical and widely known instance is a tale published in 1550 by the Milanese *poligrafo* Ortensio Lando, and ostensibly a demonstration of the vanity of astrology, and the divinatory powers of senseless beasts.⁷ Lando's story concerns the fictional Ugo of Santa Sophia, a learned gentleman of Verona, skilled in all liberal arts, and with a history of successful prognostications concerning the death of Robert of Naples, the political destiny of Hungary, and the advent of the bubonic plague of 1347.⁸ During a harvest, Carabotto, an old peasant astride an ass, warned Ugo to store his grain quickly, in anticipation of a coming storm. After noting neither clouds about the mountains, nor a discolored sun, nor strong winds, Ugo considered the exact place of the solar body in the Zodiac, examined the midheaven, determined which sign was in opposition, and finally told the peasant with disdain and irritation that a tempest was for the moment out of the question. As Carabotto insisted that the storm would soon uproot trees, kill cattle, and tear houses from their foundations,

Ugo became yet more angry, and coming close to hitting him, and full of scorn, he bade his familiar to set up his quadrant along with the *Book of Judgements*. He began once again to examine the temper of the heavens, in all the various zones, but was not able to understand how it could possibly rain. He would sooner have believed that on the same day the mountains would be flattened, and that the rivers would run backwards.⁹

Inevitably, of course, and with unsurprising rapidity, the most destructive of storms does come. In its horrible aftermath, Ugo discarded his quadrant, astrolabe, and as many books as were near him, and he hastened to ask the peasant which master it was who had taught him astrology

⁶ For a helpful overview of the status of astrology in early modern Europe, particularly with regard to its changing place in the university curriculum, see H. Darrel Rutkin, "Astrology," *The Cambridge History of Science: Early Modern Science*, eds. Katharine Park and Lorraine Daston, (Cambridge, Eng: 2006), pp. 541–561.

⁷ For a biographical sketch of Lando, see Paul Grendler, *Critics of the Italian World 1530–1560* (Madison, WI: 1969), pp. 21–38.

⁸ Ortensio Lando, *Varii componimenti di M. Hort. Lando* (Venice: 1554), pp. 160–164.

⁹ Lando, *Varii componimenti*, p. 162.

so well. Carabotto told him, in some detail, that the beast upon which he rode served as a forecaster. If the weather was turning from good to bad, the hair along its back stood up, and it put its tail between its legs. If a mild rain was approaching, the ass flicked its tail about its sides; for a tempest, however, it would prick up its ears, and stamp all four feet as if harassed by flies. And to diminish Ugo's amazement, the peasant further protested that roosters predict the dawn, but have no hourglasses in their heads, and that dolphins warn mariners of coming storms by arching their backs.

Matters did not improve for Ugo, who enjoined his companion to keep silent, but soon found that because of other witnesses to the event, his ignorance in astrology, and the ass's excellence in this discipline, had become proverbial. Lando's tale ends with a bonfire of thousands more astrological treatises and instruments, and with a gesture to the one-time practitioner's endless antipathy for peasants and asses. What is interesting about the story, from our perspective, is its handling of astrology. The events suggest that Ugo scarcely merits the title of astrologer, and Carabotto claims no special status for the ass that upstages him, but this apparent evacuation of the role of competent practitioner is undercut by the fact that the actions of both the wise man and his rustic neighbor are scripted by the same class of texts.

Thus, for instance, when he was initially warned of the storm, Ugo sought out signs presented in the first book of the *Georgics*—cloud-covered mountains, a discolored solar globe, and rough winds—before turning to a calculation presumably beyond the peasant's scope, that of the exact place of the sun in the Zodiac.¹⁰ This is no more than one might expect, and his subsequent doings—the imperious reliance on a familiar to set up the quadrant, the gesture to the generic title of one of his astrological treatises, and his minute inspection of all five of the zones of the heavens—would appear only to increase the gap between high and low knowledge. The storm of such concern to Carabotto seems to the astrologer as likely as flattened mountains and rivers running backward.¹¹

Far from being vignettes of the remote and unimaginable, the latter events, hallmark descriptions of severe seismic activity, are exactly what take place.¹² That Ugo's failure concerns this particular sort of catastrophe

¹⁰ Virgil, *Georgics*, lib. I, 355, 401, 438–459.

¹¹ Lando, *Varii componimenti*, p. 163.

¹² For discussion of an analogue, see R.F. Newbold, "Pliny *H. N.* 2. 199," *Classical Philology* 68.3 (1973): 211–213. For weather signs and earthquakes, see Eugene S. McCartney,

reflects the contested explanations of the earthquakes of 1348 among natural philosophers, not all of whom ascribed the cause to a planetary conjunction of Saturn and Jupiter in March of 1345. The fact that the plague he foresaw predated the earthquakes, moreover, would suggest that Lando, who had had some university training in medicine, wished to signal skepticism of a theory in which the fatal alignment of the planets caused the quakes, whose noxious gases in turn provoked the pestilence.¹³

But while Ugo's stance mirrors an actual dispute within the community of astrologers, it is not the case that the peasant's method of prognostications, so homely in tenor, has its origins far outside of that ambit. The minute attention paid by the old man to the beast's behavior, comic in its implicit contrast with the fussy arrogance of the astrologer, differs more in its prosaic style than in content from the precepts in classical texts presumably perfectly familiar to Ugo. Thus Theophrastus in his *On Weather Signs* had claimed that asses shook their heads before storms, Theophrastus and Aratus in his *Phaenomena* had stated that flies attacked herds more vigorously before the approach of rain, Virgil in his *Georgics* had related that under such circumstances, heifers pricked up their ears and sniffed the air, and Pliny in his *Natural History* had made the remark about roosters' ability to keep time without timepieces. And Carabotto's parting shot, concerning the warning offered by dolphins to sailors, was familiar enough to have been mentioned by Theophrastus in his discussion of weather signs, and by Cicero in his *On Divination*, where it was carefully contrasted with the fraudulent practices of soothsayers and astrologers, by Pliny in his *Natural History*, and eventually by Dante in *Inferno* XXII.¹⁴

"Clouds, Rainbow, Weather Galls, and Earthquakes as Weather Prophets in Greek and Latin Writers," *The Classical Weekly* 23.2 (1929): 11–15, on pp. 14–15.

¹³ On the relationship of the earthquake to the plague, see Laura A. Smoller, "Of Earthquakes, Hail, Frogs, and Geography: Plague and the Investigation of the Apocalypse in the Later Middle Ages," *Last Things: Death and the Apocalypse in the Middle Ages*, eds. Carolyn Walker Bynum and Paul Freedman (Philadelphia, PA: 2000), pp. 156–187; on the role of celestial events, see pp. 158, 165–166, 172–182. Levi ben Gerson's prognostication for the conjunction of 1345, made in 1344, does mention, among many other calamities, disease and "deaths which will last a long time," as well as some sort of destruction or collapse of buildings; see Bernard Goldstein and David Pingree, "Levi ben Gerson's Prognostication for the Conjunction of 1345," *Transactions of the American Philosophical Society* 80.6 (1990): 1–64, on pp. 2, 7–8, 15, 21, 31, 33–34.

¹⁴ For the foregoing see Theophrastus, *On Weather Signs*, § 41; Theophrastus, *On Weather Signs*, § 23, and Aratus, *Phaenomena*, lines 954–955; Virgil, *Georgics*, lib. 1, lines 375–376; Pliny, *Natural History*, lib.10, c. 21; Theophrastus, *On Weather Signs*, § 19, Cicero, *On Divination*, lib.1, § 70; Dante, *Inferno*, canto XXII, lines 19–21. For a helpful survey of

Lando's management of the narrative increases the already significant distance between the technical tasks and specialized equipment of the astrologer and the lowly prognostications of the peasant, or rather of his beast, *l'asino astrologo*. The insistence upon the relative robustness of knowledge presented as oral—the fact that the peasant alone is directly quoted in the tale, that what he and the ass know about weather can be written in books and consigned to the flames without consequence, and that the story itself soon makes the rounds and is converted to a proverb—is typical of an early modern interest in a carefully cultivated literary vernacular.¹⁵ Lando's fable masks its own erudite origin, which derives from commentaries written on that brief moment in *Inferno* XX where Virgil and Dante come upon a celebrated astrologer of the late 13th century, Guido Bonatti, once in the employ of the Lord of Urbino, Guido da Montefeltro, the tyrant lodged in *Inferno* XXVII. Here, the fact that an ass belonging to a local peasant predicted a coming rainstorm better than did Bonatti was said to be the subject of great merriment among the people.¹⁶

In the course of the distinctions that students of the heavens routinely drew between various practitioners, it is to be expected that Dante's Virgil would have nothing to say of the damned astrologer other than "Look at Guido Bonatti," and subsequently that Bonatti's *Liber introductorius ad iudicia stellarum* would be the first volume to be burnt by Ugo in Lando's tale.¹⁷ Lando, for his part, would elsewhere describe Virgil as given to theft—"look how much he stole in his *Georgics* from Hesiod!"—and the omens with which Book One ends as useless digressions.¹⁸ A mechanism of silent appropriation seems also to be the norm: the substratum of the peasant, the ass, and their timeless knowledge persists, and the

these and other weather signs in classical literature, see Eugene S. McCartney, "An Animal Weather Bureau," *The Classical Weekly* 14.12 (1921): 89–93, and 14.13 (1921): 97–100.

¹⁵ Lando alleges that those too convinced of their own opinions were derided with the remark, "You know more astrology than Carabotto's ass," and that they in turn replied, "And you know less about it than My Lord Ugo da Santa Sophia." See Lando, *Varii componimenti*, p. 164.

¹⁶ For the passage drawn from the 14th century commentary of Benvenuto da Imola, see Baldessare Boncompagni, *Della vita e delle opere di Guido Bonatti* (Rome: 1851), pp. 132–133; the story was also told by Cristoforo Landini, and it reappeared around 1550 by Giovanni Battista Gelli in his lectures upon Dante; see Carlo Negroni, ed., *Lecture edite e inedite di Giovan Batista Gelli*, vol. 2 (Florence: 1887), pp. 278–279.

¹⁷ Dante, *Inferno* XX: 118, and Lando, *Varii componimenti*, p. 162.

¹⁸ Ortensio Lando, *La Sferza de' scrittori antichi et moderni*, ed. Paolo Procaccioli (Rome: 1995), pp. 48–49.

various books, instruments, and historical personages, are routinely discarded. Thus Lando's story was retold, in the course of a diatribe against astrologers, by Antonio Maria Spelta of Pavia in 1606 in Italian, and thereafter in Latin, German, French, Dutch, English, and Spanish. In the Northern Italian context, interest in the warning signs of an earthquake was already strong: a series of quakes in Ferrara in the 1570s had prompted lively exchanges in treatises devoted to showing, among other things, the irrelevance of astrological prognostication in this matter.¹⁹

In the version of the story told by Spelta, the astrologer in question served the 15th century French king Louis XI, and failed to foresee a rainstorm duly predicted by an illiterate charcoal-maker, who had noticed the itching hide, lowered head, and slow pace of his ass. Though the charcoal-maker recited these details as if they were a kind of party-trick of a favorite pet, they correspond roughly to conventional formulations about farm animals by Aratus, and somewhat more precisely to later elaborations by the prominent mid-16th century French astrologer Antoine Mizauld, who stated that when asses and mules moved their heads and ears "without other causes," or scratched their hides "repeatedly and diligently in the dust, or on trees, rock, or other things," they were warning of rain.²⁰ In Spelta's account, the improvident stargazer was expelled from the court, and the king's vow—"As the Lord lives, henceforth I will have no astrologer other than the charcoal-maker's ass"—circulated as the coda.²¹

In a final version dating from the 1830s and widely circulated in the popular press, the reviled astrologer has been replaced by a "philosopher" whose professional position appears scarcely imperiled, and who suffers only a mild rainstorm for his improvidence while "riding over Salisbury

¹⁹ Martin, *Renaissance Meteorology*, pp. 45–51 and 60–79.

²⁰ Aratus, *Phaenomena*, 1116–1121, and Antoine Mizauld, *Ephemerides aeris perpetuae seu popularis et rustica tempestatum astrologia* (Antwerp: 1555), p. 48v.

²¹ *Vivit enim Dominus quia deinceps alio non utar astrologo quam carbonarii Asino*. The story first appeared in Italian in Antonio Maria Spelta, *La Saggia Pazzia* (Pavia: 1607), and in the German translation of that work, *Sapiens Stultitia. Die kluge Narrheit* (Strasbourg: 1615), in the Latin version, *Morosophia* (Cologne: 1620), and in the French one, *La Sage Folie* (Lyon: 1628). It did not appear in the first edition of Libert Fromondus' *Meteorologicum Libri Sex*, published in Antwerp by Plantin in 1627, but is present in later editions; see Libert Froidmont, *Meteorologicum Libri Sex* (Louvain: 1646), pp. 109–110. It later appeared in Johann Michael Moscherosch, *Les visions de Don de Quevedo. Das ist: Wunderliche Satyrische* (Leyden: 1646), pp. 256–258, in Jacques de Billy S.J., *Le Tombeau de l'astrologie judiciaire* (Paris: 1657), pp. 142–143, and in the very late 17th century, in Pierre Bayle's entry for Louis XI in his *Dictionnaire historique et critique*, and then in the Dutch and English adaptations of that work, as well as in Benito Feijóo's *Teatro Crítico Universal*, 8 vols. (Madrid: 1726–1739) and Johann Jacob Bräuner's *Physicalisch- und Historisch-Erörterte Curiositäten* (Frankfurt: 1737).

Plain." The prescient beast has been changed to a cow or a sheep, and has a master who will reveal its secret for a guinea.

"Now, sir," having received the money, and pointing to his sheep, "when you see that black ram turn his tail toward the wind, 'tis a sure sign of rain within an hour." "What," exclaimed the philosopher, "must I, in order to foretell the weather, stay here and watch which way that black ram turns his tail?" "Yes, Sir." Off rode [Isaac] Newton, quite satisfied with his discovery, but not much inclined to avail himself of it or to recommend it to others.²²

One might conclude that the overall trajectory of these stories implies a gradual democratization of science, and a movement from a monopoly held by erudite charlatans to a field open to the most humble of observers. Such a reading would explain the echoes of Virgil, Theophrastus, and Aratus in the various remarks of the peasants by treating those writers as dutiful if rather haphazard scribes of existing traditions: just as the rustic sometimes formulates an axiom about the weather simply by observing his livestock, so the poet transcribes such rules as he encounters them. That the tale always includes a reference to the astrologer's desire to hide his failure—or in Newton's case, an evident unwillingness to propagate his new discovery—would further suggest that texts in general are but a partial transcript of events.

Other early modern texts would support this view of the vernacularization of science, particularly in its choice of astrologers as typical of a manipulative obscurantism, and their discipline as demonstrably inferior to the observations of the plain-spoken unlettered man. It is not surprising to find, for example, that when Lando's close associate Anton Francesco Doni, writing just eight years after the publication of Nicolas Copernicus' *On the Revolutions of the Heavenly Spheres*, concocts a dialogue in which one simpleton, Carafulla, tries to persuade another, Ghetto the shopkeeper, that the earth moves, and that the sun stands still, the latter objects that he has heard nothing of the sort from the local astrologers. Carafulla dismisses their knowledge, and he goes on to attribute the occasional collapse of buildings to a shaking the earth makes from time to time in her revolution.²³ The purely local and short-term knowledge Lando had attributed to the rustic Carabotto about earthquakes in 1550 is thus

²² See, among many such examples, *The Casket* 4 (1829): 39–40; *Galaxy of Wit* (1830): 135; *Mirror of Literature* 19 (1832): 288; *Humorist's Own Book* (1833): 106. The story also reappeared in *Household Words*, a popular middle-brow magazine edited by Charles Dickens in the 1850s; see *Household Words* 3 (1882): 320.

²³ Anton Francesco Doni, *I Marmi*, ed. Pietro Fanfani, vol. 1 (Florence: 1863), p. 24.

subsumed, albeit rather casually, into the cosmographical scheme of the urban buffoon Carafulla in 1552. This conversation, overheard by a pair of amused eavesdroppers in a public square in Florence, comes directly after one admonishes the other to “take as a companion some simpleton, or some pure mind, or some lofty spirit, and not to walk in the footsteps of those arrogant learned men who think they know how the heavens are arranged, where the stars whirl, which effects the planets give . . .”²⁴

But while these texts depict the skepticism and hostility with which early modern astrologers were faced, it is crucial to realize that the responses of rustics encountered in all accounts save that involving Newton were, as noted above, likewise drawn from that part of astrology known as “revolutions.”²⁵ To fail to see this, to take the rustic as something other and less derivative than Virgil’s representation of a rustic, would be to reveal oneself as unschooled, and by implication as relatively remote from the educated elite.²⁶ That many understood and would continue to understand the rustic as genuine, as the embodiment of a naïve common sense and as the natural antagonist of the learned charlatan—rather than as an insider’s joke about education, civility, and cultural capital—is certain, but the texts themselves signal that this monopoly on letters, instead of more and less valid means of interpreting the natural world, is a primary concern.

Thus, for instance, while the rustic in Spelta’s early 17th century tale about Louis XI pointedly states, “I have never been to school, and in truth, I can neither read nor write,” before revealing the source of his foreknowledge about the weather, the king’s eventual pledge to employ henceforth no astrologer other than the charcoal-maker’s ass is made in Latin, and remains that way in most of the vernacular versions of the story.²⁷ The

²⁴ Doni, *I Marmi*, vol. 1, 22.

²⁵ For later developments in meteorology, particularly within the English context, see Vladimir Jankovic, *Reading the Skies: A Cultural History of the English Weather, 1650–1820* (Chicago, IL: 2000), especially pp. 125–142. On the surprising resilience of astrology in the English context, see Patrick Curry, “Saving Astrology in Restoration England: ‘Whig’ and ‘Tory’ Reforms,” and Michael Hunter, “Science and Astrology in Seventeenth-Century England: An Unpublished Polemic by John Flamsteed,” *Astrology, Science, and Society. Historical Essays*, ed. Patrick Curry (Woodbridge, Eng: 1987), pp. 245–259, and 261–300. On Newton’s views of astrology within the particular context of cometary theory, see Simon Schaffer, “Newton’s Comets and the Transformation of Astrology,” in *Astrology, Science, and Society*, ed. Curry, pp. 219–243.

²⁶ On this important point, see Margaret Tudeau-Clayton, *Jonson, Shakespeare and Early Modern Virgil* (Cambridge, Eng: 1998), pp. 60–71 and 78–82.

²⁷ The exceptions are the versions in Jacques de Billy’s *Tombeau de l’astrologie judiciaire* 143, which appears based on a version from by Louis Garon, translator of Spelta, in *The*

explicit exclusion of not just the unlettered man, but also the insufficiently learned one, from the system they seem at last to have entered is likewise addressed by Doni's Carafulla, whose conversion of Carabotto's earthquake into something that resembles Copernicus' mobile earth is persuasive to his companion precisely because they both have a poor grasp of Latin.

Now I believe you, because earthquakes [*i terremuoti*] are called, according to your 'timology, "moved earth," *id est*, the movement that the earth makes, and therefore the earth moves?²⁸

That the encounter of the unlettered weather watcher and the astrologer is the site of such tensions is, to some extent, a function of the category of "revolutions." What Virgil's first Georgic does not disclose is the precise nature of the connection between the types of knowledge, or rather foreknowledge, which each claims. Thus one might suppose, for instance, that the rustic's failure to plant in the period indicated by particular constellations, or to harvest in advance of specific signs of approaching storms, or to protect property and person from seasonal damage, or to cultivate an ethos of thrifty religiosity, could under certain circumstances lead to the sorts of revolts, conspiracies, or civil wars whose approach the astrologer is meant to divine, but such connective tissue appears nowhere in the text. Until the astrologer was excluded from the study of meteorology in the 18th century, this was, moreover, a strategic silence, or at least one often strategically exploited by Virgil's commentators, who explained it by gestures to a Neoplatonic universe of celestial influences on lower material bodies, and who, more importantly, insisted on the need to safeguard the arcana the poet allegedly disclosed, or to limit the types of knowledge he imparted to their proper spheres.²⁹ Significantly, a depiction of natural

Curious Traveller (London: 1742), pp. 127–128, and in Benito Feijóo's *Teatro Crítico Universal*, vol. 8 (Madrid: 1739), p. 42, for which the source is the Jesuit scholar Claude Dechaies. The Latin is somewhat abbreviated in Fromondus' version of 1646, where the entire anecdote is in that language. The Latin is retained in some 19th century versions; see Georg Conrad Horst, *Zauber-bibliothek*, vol. 4 (Mainz, Ger: 1821–1826), pp. 348–349.

²⁸ Doni, *I Marmi*, vol. 1, p. 25.

²⁹ On the removal of the astrologer, and the privileging of the farmer or shepherd, see Jankovic, *Reading the Skies*, pp. 134–136; for a typical example of the hostility to "astrological cant and jargon," and the distinction of this practice from astronomy, see John Pointer, *A Rational Account of the Weather* (Oxford, Eng: 1723), fol. A2. On a late 17th century attempt to use planetary positions for systematic weather prediction, see Curry, "Saving Astrology," and Hunter, "Science and Astrology," in *Astrology, Science, and Society*, ed. Curry, pp. 248, 256, 264–266, 284. On the tendencies of Virgil's early modern interpreters,

magic as a meshing of celestial effects with terrestrial objects was drawn from Virgil's advice "to entwine elms with lusty vines," as if to suggest that for the skilled reader alone, the *Georgics* led from mere directives about rural life to the more sophisticated manipulation of one's environment.³⁰

The same point was made implicitly by writers such as the influential and prolific Antoine Mizauld, physician and astrologer to Marguerite de France. In his *Perpetual Ephemerides of the Air, or Popular and Rustic Astrology of the Weather*, published in French in 1547 and in Latin in 1554, he described Virgil as "the greatest philosopher" and his works as "divine philosophy," paraphrased much of the first book of the *Georgics*, and explained the connection between the "foreknowledge of beasts," the meteorological disturbances noted by the rustic, and the activities of the astrologer through references to a doctrine of sympathy, to Neoplatonism, and to a traditional notion of exhalations and condensations.³¹ In these instances Mizauld also resorted to pictorial language, as if another medium would better disclose the causal connections between the various signs grouped under astrology; not surprisingly, the sorts of images involved moved from the pantomimes of beasts to the painterly compositions in clouds to the abstraction of Zodiacal signs. Thus in elaborating the precepts in Aratus' *Phenomena*, the *Perpetual Ephemerides* stated, for example, that

If cattle return unwillingly in the evening to the stable, and with unusual lowing, and if calves jump about excessively, and feed greedily without other causes, there will undoubtedly be a thunderstorm in a few days, as if these depictions were representing a highwayman's thievery right in front of you.³²

and on their eventual failure, see Tudeau-Clayton, *Jonson, Shakespeare and Early Modern Virgil*, pp. 80–112, 228–244.

³⁰ Virgil, *Georgics*, lib. 2, 221, and *ut agricola ulmos vitibus*, in Giambattista della Porta, *Magiae naturalis libri XX* (Naples: 1589), 6. For earlier references to the Virgilian verse in the work of Ficino and Pico, see Paola Zambelli, *White Magic, Black Magic in the European Renaissance* (Leiden: 2007), pp. 25–26.

³¹ Mizauld, *Ephemerides*, 7, 12–14, 129v. On Mizauld, see Jean-Claude Margolin, "Ordre cosmique et recherches causales dans la pensée astrologique d'Antoine Mizauld," *L'art des confins. Mélanges offerts à Maurice de Gandillac*, ed. Annie Cazenave and Jean-François Lyotard, (Paris: 1985), pp. 343–363; on the tendency to eclecticism, and taste for compilations and commonplaces, see pp. 348–349, 350, 351; on the resistance to precise causal explanations, see pp. 349, 358, 361; on the Aristotelian doctrine of exhalations, see Martin, *Renaissance Meteorology*.

³² Mizauld, *Ephemerides*, 49; compare Aratus, *Phaenomena* 1116–1121. Mizauld alleges a similar sort of "painting" in the spider webs seen before storms; see *Ephemerides*, 43, and Aratus, *Phaenomena*, 1033.

In addition to this dumb show, particular meteorological events might also be anticipated in clouds and other aerial phenomena, which Mizauld described as “nature’s book,” “painted in vivid colors and images, as if by a brush.” He alleged, finally, that it was the experienced astrologer who could foresee long-term developments such as drought, civil unrest, or the deaths of great men, by observing the Zodiacal sign in which the moon happens to be when thunder breaks out.³³

The rustic’s apparent conflict with the astrologer was, in sum, part of an elaborate fiction. Occasionally, as in the late 16th century Anglo-French *Kalender of Sheparden*, the fabricated nature of the conflict is tacitly acknowledged: here, well-versed shepherds near the “playne of Salisbury” rehearse astrological knowledge, gesturing occasionally to “the clerks” or to “Ptolemy, Prince of Astronomy,” or the authority of the “poets and astronomers,” but otherwise explaining lunation, the seasons, the Zodiac, the spheres, the precession of the equinoxes, and the calculation of the hours of the night to an audience capable of the vernacular and of rudimentary Latin, but without such field experience.³⁴ In the case of the tales of the asinine astrologer, neither the correctness of the particular observations of the unlettered man nor the sometime weakness of those of the astrologer matters so much as the latter’s attempt to maintain his access to power through his traditional monopoly on learning. It is notable, in fact, that Doni’s astrologers are not necessarily unfamiliar with Carafulla’s idea of a mobile earth, but are said to be eager to retain it as a weapon in a long-term skirmish with the populace. When Ghetto reports that a doctor who owns an armillary sphere moves the outer circles, and not the ball that represents the earth, Carafulla warns him, “Oh, they do like fencing masters, keeping back a blow for themselves, since they don’t want us to know everything.”³⁵

The contested status of the astrologer is clearly linked, moreover, to that of the poet, and this was especially the case with Virgil and his *Georgics*. Pliny’s *Natural History*, written just over a century later, drew copiously on the *Georgics* in its discussion of agriculture and weather lore, but also

³³ Mizauld, *Ephemerides*, 6v, and 114–117.

³⁴ *The Kalender of Shepheardes, Newly Augmented and Corrected* (London: ca. 1585), Preface, Prologue, and Chapters xxxii–liii. On the importance of this work for Edmund Spenser, and on the additional emphasis placed on the *Georgics*, see Abigail Shinn, “‘Extraordinary discourses of vnnecessarie matter’: Spenser’s *Shepheardes Calender* and the Almanac Tradition,” in *Literature and Popular Culture in Early Modern England*, eds. Matthew Dimmock and Andrew Hadfield (Surrey: 2009), pp. 137–149, especially pp. 140, 147–149.

³⁵ Doni, *I Marmi*, vol. 1, 25.

registered frequent differences with Virgil's treatment of matters such as the planting of vines and the optimal season for sowing, pointing instead to the consensus of other and more anonymous figures.³⁶ Significantly, too, Pliny commented upon the great difficulty of "mixing together," as had Virgil in the first book of the *Georgics*, "divine celestial matters with rustic ignorance," and he followed specific recommendations made by the poet with his own stated preference for the "utility of the rules," as if an aesthetic tendency towards superabundance had undercut the practical value of the poetic text.³⁷ The prognostications for weather, in particular, while Virgil and his elaborations were acknowledged, were introduced with a brisk corrective, "we will touch on these things briefly, pausing only on the most pertinent."³⁸

While this maneuver suggested that the short catalogue that followed, shorn of poetic excess and artifice, offered only genuine rules for meteorological prognostication, in the early modern period, this stripped-down list in its turn was inserted into Erasmus' very influential *On Copiousness*, under the general heading "Formulas for Predicting."³⁹ What was at stake here was therefore much less the accuracy of the rules, than a variety of elegant ways of suggesting the approach of wind or rain, or of recognizing such suggestions in the texts of others. The emphasis had shifted from observational rules to rhetorical formulations, but Erasmus' list was then appropriated once more in 1615 in Wolfgang Hildebrand's *Natural Magic*. Here the Latin phrases were accompanied by German translations, and the whole undertaking, despite an explicit acknowledgement of its Erasmian source, was treated not as an exercise in eloquence, but as a bona fide aid to prognostication.⁴⁰ The contrast between the Latin version and its vernacular equivalent, in particular, seems initially to suggest Hildebrand's investment in a plainspoken meteorology of unequivocal rules: *Exoriens notus venturam pluviam praemonet*, "The south wind, rising, warns of coming rains," is converted with comic speed to *Sudwind bringt*

³⁶ Pliny, *Natural History*, lib. XVII, s. ii, lib. XVIII, s. xxx, lib. XVIII, s. xlv, lib. XVIII, s. lvi, lib. XVIII, s. lxxv. For a helpful overview of Pliny's contributions to meteorology, see Taub, *Ancient Meteorology*, pp. 172–189.

³⁷ Pliny, *Natural History*, lib. XVIII, s. lvii (xxv), and lib. XVIII, s. lxxv (xxxii).

³⁸ Pliny, *Natural History*, XVIII, s. lxxv (xxxii).

³⁹ Erasmus, *Copia*, in *Collected Works of Erasmus of Rotterdam*, vol. 2., trans. and annotated Betty I. Knott (Toronto: 1978), lib. 1, c. I, 77. On Erasmus' extraordinary commercial success as an author, see Pettegree, *The Book in the Renaissance*, pp. 82–86.

⁴⁰ Wolfgang Hildebrand, *Magia Naturalis* (Darmstadt: 1615), pp. 277–280.

Regen.⁴¹ That said, Hildebrand's work preserved, in a way that is characteristic, the dual status of Virgil as the preeminent figure of both poetry and natural knowledge, for in addition to numerous citations of Latin and vernacular lyric, this book of secrets began with invoking a formula from the *Georgics*, "Blessèd is he who can learn the causes of things."⁴²

These Songs of Ours

While prose, particularly the brisk narratives of the *poligrafi*, seemed ideal for conveying both the growing skepticism towards the learned astrologer and the suitably disguised recognition of his authority, such attitudes also emerge in early modern Italian verse. In 1592 the gifted beast reappeared in a work influenced by Doni, *The Nobility of the Ass*, by Adriano Banchieri, better known as an organist, composer, and theorist of music.⁴³ By 1595, this monument to pompous erudition had been translated to English. It would be difficult, however, to interpret the verses devoted to the animal in his guise as astrologer, which Banchieri attributed to a wholly fictitious "choice poet," as an attack on the practice itself.

In sooth I thinke that who so gives his minde,
T'observe his iestures, by good prooffe shall see:
To Mathematique skill [the ass] is enclinde,
Because without reach of Astrologie,
Above the rest he doth the spring descrie,
For alway by his voice the same is told,
When as he feedes, and delveth with his foote:
Or to the earthe holds downe his head, be bold,
Rain doth ensue, to bide is no boote.⁴⁴

As if to insist on the dangerous association of a modest acquaintance with classical texts with this primitive form of astrology, Banchieri subsequently reported that "Isidore affirms in his *Etymologies* that the ass is the one that shows the true equinox, because at that time he brays twelve times a day, and as often at night."⁴⁵ This appears to be a willful confusion of the *aequinoctium* or "equinox," when the hours of the day and night

⁴¹ Hildebrand, *Magia Naturalis*, p. 279.

⁴² Virgil, *Georgics*, lib. 2, 490, and Hildebrand, *Magia Naturalis*, 5.

⁴³ Grendler, *Critics of the Italian World*, pp. 61, 201.

⁴⁴ Adriano Banchieri, *La nobiltà dell'asino* (Venice: 1664), pp. 38–39, and Adriano Banchieri, *The Nobleness of the Asse* (London: 1595), fol. D2.

⁴⁵ Banchieri, *La nobiltà* p. 39.

are equally long, with the Ovidian *noctis equi* or “horses of the night,” and the ass itself with the two stars named *Asellus borealis* and *Asellus australis* whose visibility was used by Aratus, among others, to predict wind and rain.⁴⁶

Astrology and astrologers are scrutinized in broader terms in Pavano, the dialect poetry of Padua and its environs. Mid- to late 16th century Pavano presented opportunities for an erudite and slightly antiquated imitation of rustic speech patterns, and Virgil, particularly the Latin poet in his Georgic guise, is a frequent reference point. Such allusions, undertaken in the lyrics of the poet and painter Giovanni Battista Maganza and his circle, are studiously casual and resolutely local. Weather-signs lifted from the first book of the *Georgics* are simply inserted, here and there, as if a stock part of every rural speaker’s conversational repertory, and the allusions to constellations, to the moon, and to Venus are routinely converted to a regional idiom, only to be subsequently re-identified in marginal notations made in Tuscan.⁴⁷ The familiar legend of Virgil as one who dictated the verses of the *Georgics* freely in the morning and polished a few to perfection in the evening is implicitly questioned when, in a typical composition, Maganza complains to a patron about the difficulty of “this awful business of sonneteering:” “And even if that Zilio of the Maron clan / Had some luck here, who knows if it’s true?”⁴⁸

On one occasion, Maganza explicitly presented his poetic activity as the antithesis of astrological investigation. In the preface to his second collection of Pavano verse, first published in 1562, he moved from his usual shambling references to *cettaini sletrani che favella per gramegho, o fiorentinescho*, “learned city folk who speak in grammar, or Tuscanese,” to the observation that

to me it seemed better to sing one of these songs of ours, than to stay wearing out my brain in trying to astrologize [*strolichare*] on one of those big old books of those guys ‘Stotle or Kickero, because in that stuff you tire yourself out trying to find out things that the Lord Jesus wanted to hide from us, so that we wouldn’t want to think about what was going on up there, but seeing that in this world there is no good other than living happily, and doing

⁴⁶ For discussion of the *Aselli* (Delta and Gamma Cancri), see Aratus, *Phaenomena*, 898–906.

⁴⁷ For a reference to Virgil, *Georgics*, vol. I, 446, see Giovanni Battista Maganza, *Prima, Seconda, Terza Parte de le rime di Magagnò* (Venice: 1569–1570), fol. A6v. For translations of the names of stars or planets to Tuscan, see for instance Giovanni Battista Maganza, *Delle rime in lingua rustica padovana* (Venice: 1620), pp. 10, 75–76.

⁴⁸ Giovanni Battista Maganza, *La terza parte de le rime* (Venice: 1569), Fol. H.

well by each other, it is better to dig into those things that give no worries or trouble.⁴⁹

This opposition elides access to Latin or Tuscan with expertise in astrology, and the rustic *canzonette* or “these songs of ours” with a socially tractable and frugal religiosity. Such maneuvers appear to have benefited Maganza himself little, both because his dabbling in alchemy was financially ruinous, and because he was found guilty of heresy by the Holy Office in 1571, but he returned to the issue of astrology, and to what seems to have been the correlative question of social advancement, in his last collection of poems, published in March 1583.⁵⁰ In verses addressed to the nobleman Francesco Bembo, Maganza recounted his encounter with a *Dottor Capasanta*, a “great astrologer” and presumably a fictitious character, who explained to him that two outer planets were due to rub against each other. This poem is perhaps the timeliest of the entire collection, as it concerns the grand conjunction of Jupiter and Saturn in May 1583, which would have taken place as many readers were encountering the work, and in this respect it resembles Maganza’s earlier tendency to publish individual poems as recapitulations of current events.⁵¹ Maganza, in his guise of the rustic “Magagnò,” further reported that the astrologer foresaw great reversals of fortune, such that lords would become “cowherds, poor peasants, or servants.” The social upheavals announced here are, however, contained: though the astrologer gestured to the advent of death, ruin, and war, Magagnò persisted in his professed unwillingness to make provisions other than entrusting himself to “that Lord, who has the two planets of Virtue and Splendor,” and who could at any moment convert evil to good.⁵²

Four decades later, the opposition of astrologer and poet still seemed viable to the versatile Savonese writer Gabriello Chiabrera, who treated the implicit rivalry in more oblique fashion. Chiabrera alluded in passing

⁴⁹ Giovanni Battista Maganza, *La seconda parte de le rime* (Venice: 1570), pp. 2–3.

⁵⁰ On Maganza’s ruinous interest in alchemy, see the letter and poem of Maddalena Campiglia, in Bernardo Morsolin, “Maddalena Campiglia. Poetessa vicentina del secolo XVI,” *Atti del Accademia olimpica di Vicenza* 17 (1882): 5–76, on pp. 62, 63–64.

⁵¹ Examples of these topical publications, sometimes included in his subsequent poetry collections, would include Maganza’s *Herculana in lingua venetia nella vittoria dell’armata christiana contra Turchi* of 1571, his *Canzone nellaqual si priega per la magnifica città di Vicenza* of 1572, and his *Canzone nel calamitoso stato di Venetia* of 1576; on the importance of such ephemera as news, see Pettegree, *The Book in the Renaissance*, pp. 144–146, 333–334.

⁵² Giovanni Battista Maganza, *Quarta parte de le rime* (Venice: 1583), fols. 122r–123v.

to his own ignorance of astrology—"Of the lofty flight of the stars / I know nothing, and a wretched line / of the *Almagest* I've never read"—and to the foolish obsession of the common man with phenomena such as meteors, but this posture is to be expected.⁵³ His *Sermone* XXIII, one in a series of verse letters written to close friends, was addressed to another citizen from the Republic of Genoa, the Savonese Giovanni Battista Siri, and it made the curious argument of the superiority of the alchemist to the astrologer.

Siri, in Rome I know an Armenian man,
 Who, always hunched over studying the motions
 And sites of the heavens, allows himself no peace
 In any season. And if the North Wind
 Sweeps away the clouds, and makes the air dark,
 He delights in sitting up on terraces,
 Wakeful through the cold nights, measuring
 Every single step of the planets,
 And that immense field of stars,
 And he is melted down seeking out how the Sun
 Now rises up, now descends, and now races,
 And now seems as if it just limps along
 The path of celestial signs.⁵⁴

The poet went on to describe the astrologer's periodic walks about Piazza Navona, and the popular acclaim, evidently galling, with which this man, "learned in lofty ignorance," was greeted. To the extent that the verses concern actual events, the occasion was likely that of Chiabrera's triumphal visit to Rome in early 1624 where, in recognition of his status as poet, he was awarded a papal brief by the newly elected Pope Urban VIII. Comparison of details in this poem with Chiabrera's *ars poetica*—a series of dialogues written in these same years—reveals much about the imagined relationship of the poet to the astrologer.

In the latter part of this brief poem, Chiabrera defended the alchemist, or rather the effort of alchemy, against popular suspicion and contempt, arguing that in comparison with astrology, the search for gold was the more reasonable undertaking. While astrology and alchemy were allied interests for many in early modern Rome—notoriously, of Orazio Morandi, who hoped, like Chiabrera and Siri, to benefit from the arrival of the new

⁵³ See Gabriello Chiabrera, "Al Sig. Agostino Grimaldi," *Rime*, vol. 2 (Milan: 1807), p. 311, and "Alla Serenissima Arciduchessa Maria Maddalena d'Austria, Gran Duchessa di Toscana," *Rime*, vol. 3 (Milan: 1808), p. 41.

⁵⁴ Chiabrera, "Al Sig. Gio. Battista De Siri," *Rime* 2: 320.

pope—and while the addressee of these verses would have agreed that “gold is the greatest power among mortal men,” it is not clear that Siri would have been convinced that metals could be transmuted in this way.⁵⁵ In the fall of 1622 Siri’s uncle, an expert on mining, had been charged by the Republic of Genoa with the task of locating veins of iron and establishing mines in Corsica and Capraia, a volcanic island northwest of Elba. This undertaking seems to have gone very poorly; his evaluations of different sites were rejected by a colleague who found him either “incompetent or working in his own interests,” and by April of 1623, he had abandoned the project.⁵⁶

Chiabrera’s friend Siri, like the poet himself, enjoyed papal favor. He and his brother Alessandro would become the most powerful bankers in Italy, underwriting from 1630 the immense expenditures of Urban VIII and Cardinal Francesco Barberini, and their powerful Farnese rivals, befriending Gianlorenzo Bernini, decorating their own palaces and chapels in Savona in sumptuous fashion, joining the ranks of the Genoese nobility in 1638, before succumbing to bankruptcy soon after the death of the pontiff.⁵⁷ For the moment, there seems to be no evidence that Siri believed gold could be manufactured, in the literal sense, from other and baser materials, but much to suggest that he believed that money could be made, sometimes, by laborious extractions of ore, by the patronage of the arts, and by complicated financial transactions.

The poem is more illuminating in formal terms. Like many of Chiabrera’s compositions, its hendecasyllabic lines are unrhymed verse, the only exception being the pair *loro* / *l’oro*, (“them” / “gold”). Chiabrera explained his commitment to *versi sciolti* or “unfettered verses” in his dialogues, arguing, for example, that “the narrative poet uses verses that

⁵⁵ On Morandi’s interest in alchemy as well as astrology, and on the place of the former in Morandi’s lending library and in a workshop of the monastery of Saint Praxed in Rome, see Brendan Dooley, *Morandi’s Last Prophecy and the End of Renaissance Politics* (Princeton, NJ: 2002), pp. 27–28, 33, 41, 67–68, 90–91. On a similar taste for both alchemy and astrology in the circle surrounding Morandi’s correspondent Don Giovanni de’ Medici, see Edward Goldberg, *Jews and Magic in Medici Florence: The Secret World of Benedetto Blanis* (Toronto: 2011) pp. 124–132, 159–161, 166–180, 189–193, 239–240. But on the substantial divide between the two pursuits, see the overview in *Secrets of Nature: Astrology and Alchemy in Early Modern Europe*, eds. William R. Newman and Anthony Grafton (Cambridge, MA: 2001), pp. 14–27.

⁵⁶ Giuseppe Pipino, *Oro Miniere Storia. Miscellanea di giacimentologia estoria mineraria italiana* (Ovado, Ital: 2003), pp. 115–117.

⁵⁷ Giovanni Vincenzo Verzellino, *Dell memorie particolari e specialmente degli uomini illustri della città di Savona*, vol. 2 (Savona: 1891), pp. 14, 19–20, 284, 298–299, 391.

neither oblige him nor deprive him of freedom," and that "he wants no impediment in his path, but proceeds master of himself, as a noble narrator of grand matters must desire to do. But with *ottava rima*, you will never enjoy such measured liberty."⁵⁸ The model for *versi sciolti*, Chiabrera noted, was the quantitative verse of Greek and Latin poetry, with its long and short syllables, which in Italian (and most vernaculars) had as a very rough equivalent the variation of accented and unaccented sounds. To the familiar objection that unrhymed verse would scarcely differ from prose, Chiabrera responded that the musicality of the best hendecasyllabic lines, the relative unusualness of the diction, particularly that involving composite words, the lofty nature of the subject matter, and the pedigree of antiquity, were all distinguishing marks of lyric.⁵⁹

What is crucial here is the nature of the tasks assigned to such a poet, and the sustained association of these efforts with those of the astrologer. Like Chiabrera's ideal poet, the Armenian magus is concerned both with the regular measurement of time and with the imposition of a varied pace. The consonance between the uniformity of basic poetic structures and that of the motions of the heavens is to be expected, the influential fifth century Neoplatonist Macrobius having stated that "in the hymns to the gods . . . the verses of the strophe and antistrophe used to be set to music, so that the strophe might represent the forward motion of the celestial sphere and the antistrophe the reverse motion of the planetary spheres."⁶⁰ These and related terms were still under discussion in the early 17th century, for they are mentioned in one of the first reactions to Galileo's *Starry Messenger*.⁶¹

Against the backdrop of predictable and even monotonous regularity there was, for the ideal poet, an opportunity for stylistic innovation, and for the Armenian astrologer, the occasion of troublesome observations and measurement. Thus Chiabrera noted in one of his dialogues that while the strophe and antistrophe, or the first two stanzas of an ode, were characterized by a certain formal symmetry, the length and pacing of individual lines was a matter of aesthetic choice: "minds ought not to be so

⁵⁸ Gabriello Chiabrera, "Il Vecchietti," in *Dialoghi dell'arte poetica di Gabriello Chiabrera con altre sue lettere*, ed. Bartolommeo Gamba (Venice: 1830), pp. 51, 53.

⁵⁹ Chiabrera, "Il Vecchietti," "L'Orzalesi," "Il Geri," "Il Bamberini," *Dialoghi*, pp. 29–34, 59–60, 91–93, 112–119, 122–123.

⁶⁰ Macrobius, *Commentary on the Dream of Scipio*, trans. William H. Stahl (New York: 1951), p. 194.

⁶¹ Giambattista Manso to Paolo Beni, March 1610, in Galilei, *Opere*, vol. 10, pp. 291–296, on 294.

constrained that they cannot depart from the footprints left by others, but rather in the composition of odes, everyone should be allowed to write strophes, antistrophes, and epodes as he sees fit.⁶² Matters appeared less engaging for the astrologer, but just as the *stanze*, literally, “rooms,” with which the poet was concerned could vary in size, so the twelve houses into which the Zodiac was divided were generally *not* considered to be uniform in length.⁶³ Thus the astrologer, too, was concerned with pacing: Chiabrera’s insistence on the sun’s apparent path as a kind of alternation between a race and a halting gait recalls both the common reliance of poetic vocabulary—*pièdi* or “feet,” for example—on terms referring to a walking pace, and the specific issue of the choliambic verse or so-called “limping iamb.”⁶⁴

Though Chiabrera seems thus to have suggested a certain kinship between the astrologer and the poet, particularly the poet who had abandoned the strictures of rhyme, one might reasonably object that the observer of the heavens was constrained in a way that the literary man was not, and that his task, purely technical in nature, had little enough to do with creation, and more to do with the collection of unambiguous information. Chiabrera, and perhaps most of his peers, saw it otherwise: the Armenian, so irritating in his lofty ignorance, “goes shaping the heavens / As he sees fit,” which suggests considerable latitude in the interpretation and representation of celestial data. The attitude ascribed to this astrologer might well reflect the substantial and increasing differences in opinion about both the physical constitution of the heavens and the various modes of calculating the effects of particular celestial bodies, but it is also worth noting that in a passing allusion to an epic, Torquato Tasso’s *The Seven Days of the World’s Creation*, Chiabrera deployed similar language to describe an aesthetic task, writing that this poet “gave shape to the Universe” through the use of *versi sciolti*.⁶⁵

The peculiar equivalence between the poet and his product—between the noble freedom of the writer and those *versi sciolti*, verses that are

⁶² On the identification of *stanze* with the strophe and antistrophe, and on their uneven lengths, see Chiabrera, “L’Orzalesi,” “Il Geri,” and “Il Bamberini,” *Dialoghi*, pp. 79–82, 93–94, 108–109.

⁶³ Dooley, *Morandi’s Last Prophecy*, p. 114, and Anthony Grafton, *Cardano’s Cosmos* (Cambridge, MA: 1999), pp. 8, 25–28, 66, 102, 105, 113. For discussion of the five different house systems, see J. C. Eade, *The Forgotten Sky. A Guide to Astrology in English Literature* (Oxford, Eng: 1984), pp. 42–46.

⁶⁴ On the *versi zoppi*, see Chiabrera, “L’Orzalesi,” in *Dialoghi*, pp. 70, 72.

⁶⁵ Chiabrera, “Il Vecchietti,” in *Dialoghi*, p. 30.

“unfettered,” or rather “dissolved” or “melted”—is highlighted by its translation to a comic idiom. In Chiabrera’s poem, the sweating astrologer *stemprasi*, “is melted away” or better, “dissolves himself” in his study of the sun. And it is no surprise to find that, like his antagonist, Chiabrera also claimed that he worked on a terrace, albeit one sheltered from the North Wind, gently warmed by the sun, and full of light even at dusk.⁶⁶

That Chiabrera saw the astrologer and the poet in terms of each other is worth further scrutiny. It is possible, of course, that the pompous man corresponded to an actual acquaintance who paraded about Rome, for the city was then said to be “filled with these charlatans,” some of whose exotic provenance seems to have added to their appeal, and a particular bookstore in Piazza Navona, the scene of the Armenian’s triumphs, was evidently a gathering place for enthusiasts of astrology and other occult pursuits.⁶⁷ It may also be the case that Chiabrera, who was a loyal supporter of Galileo Galilei and who compared his own aesthetic freedom to that natural philosopher’s ability to shed cumbersome intellectual restraints, sought to differentiate the astrologer from the astronomer in this hyperbolic portrait.⁶⁸ But it is the larger issue of the social status of the astrologer and the poet, and the tenor of this relationship that is the more rewarding question. There is much to suggest that this pair was not so much divided by incommensurable interests as united in its interest in the same resources and similar audiences.

The astrologer, particularly in the competitive environment of early modern Rome, wore his learning heavily.⁶⁹ He could not do otherwise, for his claim to expertise needed to rest upon an authoritative system of interpretation—of which there were several—and mastery of many technical details, details whose number and complexity were not normally within the grasp of his clients, and which provided him with reasonable safeguards against the inaccurate and irrelevant predictions he was bound to make.⁷⁰ On this latter point, the fact that the exact moment of the

⁶⁶ Chiabrera, “Il Geri,” and “Il Forzano,” in *Dialoghi*, pp. 85, 125, 126.

⁶⁷ Dooley, *Morandi’s Last Prophecy*, pp. 12, 68, 125, 145.

⁶⁸ Chiabrera, “Il Geri,” p. 98; on the relationship of Chiabrera and Galileo, see the references in Galilei, *Opere*, vol. 10, 399, vol. 11, 597, vol. 12, 42, and vol. 15: 212, and the discussion in Gabriello Chiabrera, *Lettere (1585–1638)*, ed. Simona Morando (Florence: 2003), xvi–xvii, 115, 247.

⁶⁹ On Girolamo Cardano’s efforts to distinguish himself by references to his superior methods and greater rigor, see Grafton, *Cardano’s Cosmos*, pp. 38–41, 50, 53, 56–61, 63, 79–81, 89, 98, 134, 144–145, 150, 173.

⁷⁰ For typical references to the provisional nature and complexity of astrology, and the unrealistic expectations of the common people, see Mizauld, *Ephemerides*, 19–20, Dooley,

conception or the birth of many individuals, so crucial to the nativity, was often unknown, and that the formulaic safeguard against astral determinism was the precept that the stars incline, rather than compel, both served further to protect the astrologer against those who expected more reliable results from him. But whether this practitioner specialized in crude woodcuts and alarming prognostications, or was publicly identified with low professions, or managed to combine his predictions with the latest political news or medical advice, or couched his counsel in mellifluous bombast, he needed to promote his work with special vigor. The recondite nature of the field, the lack of consensus among adepts and the ambiguous results in which they trafficked, the resultant absence of codified rules and norms, established apprenticeships, and credentialed gatekeepers, the frequent calls for reform, the slow erosion of its standing in Italian and English universities, and the especially volatile period of the 1620s all meant that the individual astrologer had to make particular claims, largely performative and rhetorical, to differentiate his services from those of his rivals.⁷¹

The situation of the early modern Italian poet differed considerably in that his was a better-established and much more reputable field, and one where access was regulated through a particular sort of education, and enlivened and monitored through the participation of literary academies in many Italian cities. There were no guarantees that the system of patronage privileged the talented and discouraged the less gifted; indeed, the constant need for celebratory panegyrics and lavish spectacles among this patchwork of fiefdoms would seem to have sustained many writers of rather modest accomplishments.⁷² That said, the somewhat grudging recognition accorded today to Chiabrera, Giambattista Marino, and

Morandi's Last Prophecy, pp. 27, 114–116, 118, 122–123, 167, and Grafton, *Cardano's Cosmos*, pp. 10, 79–80, 94, 121, 142, 147.

⁷¹ On the calls for reform and the fate of astrology in Italian and English universities in this period, see Rutkin, "Astrology," pp. 547–551, 553–554; on Cardano's ambitious plan to revive classical astrology, see Grafton, *Cardano's Cosmos*, pp. 132–155; on the socio-economic conditions in Rome in the 1620s that made the monastery at Saint Praxed a popular destination, especially among the curia, for astrological advice, and on Morandi's plan to offer a more empirical basis to the practice, see Dooley, *Morandi's Last Prophecy*, pp. 101–124. For some measure of the contrast with "European rapid-discovery science," see Randall Collins, *The Sociology of Philosophies. A Global Theory of Intellectual Change* (Cambridge, MA: 1998), pp. 523–569.

⁷² For an illuminating study of one playwright and poet's role as cultural broker, see Janie Cole, "Cultural Clientelism and Brokerage Networks in Early Modern Florence and Rome: New Correspondence between the Barberini and Michelangelo Buonarroti the Younger," *Renaissance Quarterly* 60 (2007): 729–788.

Alessandro Tassoni, ratifies the prominence they enjoyed as the greatest poets of the early 17th century.

But the particulars of Chiabrera's very ambitious agenda—to draw upon classical models, especially that provided by Pindar, despite the distance between Greek and Italian prosody, to benefit from the heritage of the *Pléiade*, to compose lyrics of such musicality that they might readily be adopted by rising stars such as Claudio Monteverdi, to portray himself as unfettered in certain aesthetic matters, and yet entirely ready to provide courtly spectacles in Florence and in Mantua, to appeal to a wide and not necessarily sophisticated public, and to articulate a poetic program only among other connoisseurs—appears to have bred in him a sense that the service he was providing both depended upon and simultaneously increased the confidence and status of his consumers.⁷³ In this, in fact, he would have differed little from his Armenian astrologer, whose conjectures at once required a certain measure of faith from those willing to pay for them, and offered them the means, in theory, to profit from such insights. The criticism Chiabrera aimed at the astrologer—the absence of a demonstrable relationship between his claims and the spectacular outcomes sought out by communities and individuals—applied equally well to the poet: “What good is he to the city? / . . . What war will he win? What lofty edifices / Will he erect to adorn it?”⁷⁴

Just as the poet and the astrologer appear associated in this *sermone* in their measurement of time, so they would seem linked in their interest in cultural resources, if not solely in the gold whose potential manufacture Chiabrera appears to applaud. Thus the only rhyme—appropriately, the *rime riche* of *loro* / *l'oro*—is anticipated by the early insistence on *ora*, meaning “hour” or in this case, “now, this hour:” the sun “now rises up, now descends, and now races, / And now seems as if it just limps along / The path of celestial signs.”⁷⁵ Inevitably, and in a fashion that signals the need to convert such temporal measurements, whether made by the poet

⁷³ On Chiabrera's cultural agenda see the still valuable study of Giovanni Getto, “Un capitolo della letteratura barocca: Gabriello Chiabrera,” *Lettere italiane* 6.1 (1954): 55–89; for a detailed discussion of Chiabrera's autobiography, see Clizia Carminati, “L'autobiografia di Chiabrera secondo l'autografo,” *Studi secenteschi* 46 (2005): 3–41.

⁷⁴ Chiabrera, *Rime*, vol. 3, 321. The line recalls typical defences of lyric such as Propertius' *Elegies* 3.2.

⁷⁵ On the importance and development of the *rime riche* and the *rime pauvre* or *rurale* for the *Pléiade*, see David Wilson-Okamura, “The French Aesthetic of Spenser's Feminine Rhyme,” *Modern Language Quarterly* 68.3 (2007): 345–362, on pp. 357–362. I thank my colleague Jeff Dolven for this reference. On Chiabrera's devotion to the *Pléiade*, see Getto, “Un capitolo,” pp. 66–71.

or the astrologer, into capital, *ora* becomes *oro*. The fact that the repeated phrase *ei cerca l'oro*—in itself singularly, or rather triply, unpersuasive—is augmented only by the phatic “I say,” insists that this conversion is a function of poetic diction. The superabundance of the sound *or* in the subsequent verses make the same point, as if the *versi sciolti* themselves had been definitively dissolved into some substrate, at once valuable and purely phonetic:

*Ei cerca l'oro, ei cerca l'oro, io dico
Ch'ei cerca l'oro; e s'ei giungesse in porto,
Fora ben per se stesso, e per altrui.*

He's looking for gold, he's looking for gold, I say
That he's looking for gold, and if his ship were to come into port,
It would be a gain for him, and for others.⁷⁶

“When words are not words,” Chiabrera wrote in one of his dialogues, “they are worth their weight in gold,” suggesting that the *versi sciolti* from which his prestige derived tended toward some sort of semantic melt-down into musicality or pure sonority.⁷⁷ And the wanton shift from *ora* to *oro* in these particular lines would have likewise confirmed the popular misunderstanding of the Italian word *oroscopo*—from the Greek *horoskopos* and literally “one who conducted a search for the proper hour”—as more closely connected to someone looking for gold.

The conspicuous consumption of early modern Italy in the 1620s threatened to exhaust the resources available to poets and astrologers alike. In a late work, the “Discourse on Magnificence,” designed to promote lavish spending on civic projects and on civil defense in Genoa, Chiabrera concluded his address by arguing that the poet, though he had contributed directly to neither effort, somehow participated in both, by celebrating such splendid expenditures, well before and long after they were made, as virtuous and altruistic. Significantly, too, here the work of the lyricist was pitched in terms of the astrologer's task, but not in the covert terms of the earlier poem:

I have spoken of the magnificence of this city, but it is not true that other worthy actions mean less to her. Rather, just as the Sun, passing through the Zodiac, illuminates many houses in diverse fashion, so Virtue, passing through Genoa, has variously rendered different families illustrious.⁷⁸

⁷⁶ Chiabrera, *Rime*, vol. 3, p. 321.

⁷⁷ Chiabrera, “Il Geri,” in *Dialoghi*, p. 84.

⁷⁸ Chiabrera, “Discorso della magnificenza,” in *Dialoghi*, p. 199.

The allusion to the varied splendor of the houses of Genoa had a literal referent: the successful struggle of the new and moneyed class to attain the status of the older aristocracy was perfectly legible in the increasingly ostentatious building projects of both groups.⁷⁹ But Chiabrera's point, insofar as it concerns the role of the poet, is really elsewhere. His figure of speech suggests that one general function of the successful astrologer—to explain, to justify, or perhaps to lament, by meticulous attention to those unequal houses of the zodiac, the fortunes of individuals, families, and states—was recognizable, and ready for re-appropriation.⁸⁰ The poet was not, however, the only one to covet a cultural position tenuously occupied by the astrologer. News-writers and rumor-mongers wanted it too.

Newsmakers and Starry Messengers

Giovanni Battista Maganza had used the term *strolichare*, “to astrologize,” as an amusing synonym for any unusual sort of mental exercise, beginning a poem, for instance, “Tonight, dear friend, while I was thinking / About your doings, because usually I stay / Right before sleeping, a while in astrologizing, / I told myself a bold thought...”⁸¹ The insistence on the absolute remoteness of astrological speculation from his daily (or rather nocturnal) activity was at once a provident measure for an individual already investigated by the Holy Office, and a typical reaction to the increasing strictures on astrology, particularly on its appearance in popular almanacs and news. A papal bull issued by Pope Pius V in mid-March 1572, less than two weeks before his death, was directed against all “those who write, dictate, keep, transmit, and fail to destroy libelous pamphlets and those things called ‘newsletters’” and it warned against the short-term predictions, not necessarily astrological in origin, associated

⁷⁹ On the mania for building palaces and private chapels in and around Genoa in the early modern period, see Giorgio Doria, “Investimenti della nobiltà Genovese nell’edilizia di prestigio, 1530–1630,” *Studi storici* 27 (1986): 5–55; on the struggle of the two moneyed groups, see p. 8; on the embellishment of family chapels, see p. 20; on the relative costs of these building projects, see pp. 23–24.

⁸⁰ The interesting portrait of the court-based Florentine poet, artist, astrologer, and publicist Raffaello Gualterotti in Edward Goldberg’s *Jews and Magic in Medici Florence*, is a striking instance of a figure who combined rather than distinguished these roles; see in particular *Jews and Magic*, pp. 126–127, 160, 191–192, 197–198, 200, 273.

⁸¹ Maganza, *Quarta parte*, p. 65v.

with such writings.⁸² Under a year later his successor, Pope Gregory XIII, threatened “those scandal-seekers known as *menanti*, and those who accept their writings, and those copying and transmitting libelous pamphlets,” noting that such rumormongers dealt not just in a promiscuous and irrelevant blend of tales about the recent past, but also that “they foolishly foretell what will come to be.”⁸³

By 1586, Pope Sixtus V had issued a bull against all who practiced judicial astrology and other divinatory arts, and the consumers of their books, and though the specificity of the injunction suggests that almanac-makers existed apart from newsvendors, their association remained close in the popular mind, in part because at least some copyists seem to have trafficked in both sorts of texts.⁸⁴ The format of the *Stupendous and Marvelous Prognostication and Almanac of the Present Year, Calculated by the Excellent Astrologer, and Professor of the Divinatory Art, Master Filindente dalle Rocche* by the prolific satirical writer Giulio Cesare Croce, posthumously published in 1617, is that of contemporaneous printed newsheets, and the subtitle announced the pamphlet as one with *Strange reports from different parts of the World*.⁸⁵ The severity of a subsequent papal bull, that issued by Pope Urban VIII in 1631 in the aftermath of Orazio Morandi’s prediction of his death, was directed at astrologers, not news-writers, but the fact that this prognostication had traveled so far and so fast—prompting Spanish cardinals, for instance, to depart for Rome for a conclave—was one more index of the interdependence of the two professions.⁸⁶ And though *Inscrutabilis* used a traditional list to name the seers and to

⁸² Catholic Church. Pope. *Bullarum, diplomatum et privilegiorum sanctorum romanorum pontificum*, Francesco Cardinal Gaude, ed. (Turin: 1857–1872), vol. 7, pp. 969–971. On a prior bull issued by Pius and directed against the “arte nuova” of the journalists, see Mario Infelise, *Prima dei giornali. Alle origini della pubblica informazione, secoli XVI^e XVII* (Rome: 2002), 10, and 155–158 on other papal measures against news writers. For the French context, see Alfred Soman, “Press, Pulpit, and Censorship in France before Richelieu,” *Proceedings of the American Philosophical Society* 120.6 (1976): 439–463, especially pp. 441, 447–448.

⁸³ *Bullarum, diplomatum et privilegiorum*, vol. 8, pp. 12–13. See the jurist Prospero Farinacci’s elaboration of *Contra famigeratores* in his *Responsorum criminalium liber primus* (Venice: 1606), pp. 116–117. On the supposed distinction between composing and copying, and on Farinacci, see Dooley, *The Social History of Skepticism*, pp. 16, 26.

⁸⁴ See *Bullarum, diplomatum et privilegiorum*, 8: 646–650, and Infelise, *Prima dei giornali*, pp. 23–24.

⁸⁵ See *Una Città in Piazza. Comunicazione e vita quotidiana a Bologna tra Cinque e Seicento*, eds. Pierangelo Bellettini, Rosaria Campioni, and Zita Zanardi (Bologna: 2000), pp. 170–171.

⁸⁶ Dooley, *Morandi’s Last Prophecy*, pp. 169–170, 177–178.

establish them as instigators—“*mathematici, harioli, haruspices, vaticinatores*, as they are called, and others practicing judicial astrology”—it also insisted that penalties applied to a less exotic group.⁸⁷ They were those who accepted, used, or displayed the astrologers’ speculations concerning “the Holy See, or the life or death of the reigning pope, or that of a blood relation within the third degree,” as well as to those who gave or showed such material to others, and those who trafficked in them, whether orally or with texts, and even while condemning them.⁸⁸

It is not surprising to see that both before and after this papal bull, several stories circulated in which an astrologer appears as a kind of catalyzing factotum of the emerging news industry.⁸⁹ This figure not only makes his disastrous observations about the approaching death of a ruler or the fall of a state, but he also does so in a public place, and manages to bring such news to the prompt attention of an audience, but never in such a way as to prevent the incident in question. The prototype of such accounts involves Galileo, and the subsequent versions likewise gesture to a practitioner in Tuscany.

In mid-May 1630, less than a year before Urban VIII issued *Inscrutabilis*, the news-writer Antonio Badelli, sending information from Rome to Modena, stated that

Galileo, who is a famous *matematico* and astrologer, is here, trying to get a book published in which he combats many of the opinions upheld by the Jesuits. He let it be understood that Donna Anna [Colonna, wife of Taddeo Barberini] will give birth to a son, that at the end of June we will have peace in Italy, and that soon afterwards, Don Taddeo [Barberini] and the Pope [Urban VIII] will die. This last point has been confirmed by the Neapolitan Caracciolo, by Father [Tommaso] Campanella, and by many writings, which treat the election of a new pope as if the Holy See were vacant.⁹⁰

Badelli’s report, like many in that era, contains both insider’s information and significant inaccuracies. Galileo was indeed in Rome at that moment,

⁸⁷ The list is traditionally associated with treason or threats to the dignity of a sovereign, and appears, for example, in *Sententiae* 5.21.3 of the 3rd century Roman jurist Julius Paulus. On the predictions of the death of rulers, including the pope, and on the different techniques and purposes involved, see Monica Azzolini, “The political uses of astrology: predicting the illness and death of princes, kings and popes in the Italian Renaissance,” *Studies in History and Philosophy of Biological and Biomedical Sciences* 41 (2010): 135–145.

⁸⁸ *Bullarum, diplomatum et privilegiorum*, vol. 14, pp. 211–214, on 212.

⁸⁹ On the early importance of prognostications, ephemerides, and almanacs to print in general and to the development of news in particular, see Pettegree, *The Book in the Renaissance*, pp. 147–150, 276–281, 333–338.

⁹⁰ Galilei, *Opere*, vol. 14, p. 103.

and the book whose license he was seeking, the *Dialogue concerning the Two Chief World Systems*, did contest many of the arguments upheld by Jesuits, especially those of Fathers Christoph Scheiner and Orazio Grassi. Donna Anna Colonna, the wife of the Pope's nephew, did give birth to a son less than two weeks after this news bulletin. Neither Taddeo Barberini nor Urban VIII, however, would die for years to come. Peace, of a sort, would soon come to the Italian peninsula, for the siege of Mantua ended in July 1630 when the plague-struck city was sacked by Imperial troops, and then abandoned as other engagements in the Thirty Years War proved more pressing.

It is not the case, finally, that Galileo was an astrologer in the sense that Badelli suggests; though he had cast horoscopes for family, students and patrons, by 1612, he seems to have become skeptical of the enterprise.⁹¹ In the *Dialogue*, published in 1632, he would compare the language of those who interpreted horoscopes retroactively to the misleading allegories of the alchemists, though he had a good deal more, and none of it favorable, to say about the latter.⁹² After the condemnation of the *Dialogue*, while Galileo was under house arrest in Siena, he and his views were described by his host, Ascanio Piccolomini, in a recently discovered letter of September 1633: "Signor Galileo, so famous as an Astrologer, who has been in my house for more than two months, mocks all of this business, and scorns it as a profession based upon the most uncertain, if not false, grounds." It is possible, of course, that both the passing reference in the *Dialogue* and the allusion in Piccolomini's letter were concocted as safe responses to *Inscrutabilis*; the letter, in fact, begins with the writer's reluctance to provide a geniture, and an explicit warning about the "many new edicts" against astrologers, and the Inquisition's interest in a few practitioners in Siena.⁹³

But it also seems that Badelli's report is mistaken in attributing the widely circulated prognostication of Orazio Morandi, with whom Galileo had contact during his stay in Rome in 1630, to Galileo himself. An account written two weeks earlier than that of Badelli had associated the same prognostication with a printed text authored by "Father Campanella, the famous astrologer," and added that because of a conjunction of

⁹¹ Tommaso Campanella to Galileo, in *Opere*, vol. 12, p. 32.

⁹² Galileo Galilei, *Dialogo*, in *Opere* 7, p. 136.

⁹³ For the letter and a discussion of its context, see Massimo Bucciantini and Michele Camerota, "Once More About Galileo and Astrology: a Neglected Testimony," *Galilaeana* 2 (2005): 229–232. See also David Wootton, "Accuracy and Galileo: A Case Study in Quantification and the Scientific Revolution," *Journal of the Historical Society* 10.1 (2010): 43–55, on pp. 47–48.

Saturn and Mars, the Pope was not likely to live much longer, but that Campanella himself had spoken of the matter to some cardinals, and had offered certain elaborate remedies to the distraught pontiff.⁹⁴ This report also related that “one of the Neapolitan house of the Caraccioli, who has great fame in predicting future matters through astrology, having been sought out by Cardinal [Luigi] Caietani for his judgment in such an important matter, said that before August the pope would die, for the same reasons as Campanella gave. The letter has been seen by several Cardinals, and also, it is said, by the *Connestabile* [Filippo] Colonna.” This account concludes, with a touch of perhaps unconscious irony, with the claim that Colonna, the father of Donna Anna Colonna, invited Caracciolo to Rome, saying that the Pope would be happy to receive him, but that the Neapolitan claimed he would only be able to make the journey when cooler weather had returned, and presumably after the deaths of the two Barberini.⁹⁵

Among the interesting features of this incident is the deployment of the astrologers as superior and more authoritative versions of the news-writers themselves. The wide and rapid diffusion of the actual pronouncements of Morandi, attributed to Galileo and Campanella, was entirely dependent upon *menanti* like Badelli, but in these two accounts, the great status of the “astrologers” appears to substitute for the work of such agents. The mode of propagation is studiously vague in the case of Galileo; Badelli stated only that he had let his various prognostications “be understood,” without specifying the medium or the time involved, though the subsequent sentences make it clear that such pronouncements had traveled from Rome to Naples, where their confirmation, in the form of approval by Caracciolo, was sent back to Rome. The necessary expenditure of effort and time is as if erased, however, by the misleading suggestion that the Neapolitan philosopher Campanella was, like Caracciolo, then in Naples, and above all by the opening sentence of the report, where the emphasis is on the present and on other goals: “Galileo, who is a famous *matematico* and astrologer, is here, trying to get a book published.”

The *avviso* of May 1, 1630 has similar features; there, Morandi’s pronouncement is ascribed to Campanella, Galileo having not yet arrived in

⁹⁴ Luigi Amabile, *Fra Tommaso Campanella ne’ castelli di Napoli, in Roma ed in Parigi*, vol. 2 (Naples: 1887), p. 149. On the rumor about the remedies, see Dooley, *Morandi’s Last Prophecy*, pp. 155–157, 160, 166, 184–185.

⁹⁵ Amabile, *Fra Tommaso Campanella*, vol. 2, p. 149.

Rome.⁹⁶ The actions subsequently attributed to Galileo—letting something “be understood,” presumably by speaking of it, while trying to get something else into print—have their counterparts in this report, where Campanella is said to have circulated a worrisome printed text, and then to have spoken of it, as if to alter its contents, to various cardinals. A prominent part is given to the Neapolitan Caracciolo, though other relevant data, such as his title and rank, “Baron of Amorosi,” or his membership in the celebrated Academy of the Oziosi, are suppressed in favor of his identification solely as a practicing astrologer.⁹⁷ Cardinal Luigi Caetani’s role as a member of the Congregation of the Index, and thus as one more likely to impede rather than facilitate the propagation of texts, particularly those of volatile nature, is likewise unmentioned, though it is possible that readers did not need to be reminded of this function.⁹⁸ As before, the timing of the exchanges between Naples and Rome is presented as very rapid, the sole indicator of temporal and spatial distance being in Caracciolo’s professed desire to defer a visit until the fall.

Other versions of this story reappear later in the 17th century, and in two instances, the event enunciated by the astrologer is backdated so as to precede this actual incident of 1630. In both, a celebrated figure living in Florence offers astute political pronouncements—news just on the point of being consumed—while he makes his celestial observations, *sotto voce*, as if a casual or unwilling initiator of the rumor. The first appears in an encyclopedic work of 1635 published by the Scotsman David Person. In discussing comets, traditionally associated with natural disasters and political upheaval,⁹⁹ Person offered the following anecdote:

I being at that time in *Florence*, where an *Italian* Astronomer, upon the third Bridge [i.e., the Ponte Vecchio], drawing in his Table-bookes the height and aspect of it, was overheard by us who gazed upon him, to cry although with a low voice, *Væ Germaniæ*, Woe unto *Germany*: and who so is, but never so little acquainted with the histories of diverse Nations, shall soone perceive in them what lamentable accidents have ensued after extraordinary

⁹⁶ Galileo arrived on the evening of May 3, and without much advance warning. See *Opere*, vol. 14, 97.

⁹⁷ Francesco Caracciolo, born in the first half of the 17th century, is identified as the son of “Ettore, known as ‘the Astrologer,’ Baron of Amorosi.” See *Dizionario Biografico degli italiani*, vol. 19, p. 359. On Don Ettore’s membership in the Academy of the Oziosi, see Camillo Minieri Riccio, “Cenno Storico delle Accademie fiorite nella città di Napoli,” *Archivio storico per le province napoletane* 5 (1880): 131–157, on p. 152.

⁹⁸ On this cardinal, and his interest in Morandi’s library, see Dooley, *Morandi’s Last Prophecy*, p. 70.

⁹⁹ See for instance Aratus, *Phenomena* 1129 and Virgil, *Georgics* I: 489.

deluges, and overflowings of waters, and intollerable droughths; but more especially after the appearing of Comets, what dreadfull effects according to their affections. . . .¹⁰⁰

Person did not insist on the identity of his astronomer, though early readers would naturally have associated this figure with Galileo, especially after the protracted polemical exchanges with Orazio Grassi S.J. about the nature of the comets of 1618.¹⁰¹ As it happens, Galileo was bedridden with arthritis for much of 1618, and was unable to undertake astronomical observations at home, much less from this picturesque public venue. Person would have had good reasons for not making explicit the name of the astronomer, for he manifested an antipathy for Copernicanism and an alarmed impatience with what was popularly assumed to be its natural outgrowth, those discussions bearing on the possibility of extraterrestrial life.¹⁰²

More crucial than these details, however, is the elision between the astronomer's private and spontaneous speculation—conveniently made in Latin rather than in the vernacular—and the “Histories of diverse nations,” particularly that of Germany in the opening phase of the Thirty Years War. Person's rapid gesture to this sort of connection is typical; in the *Mercurius Gallobelgicus*, a description of one of the comets of 1618 begins, “the war having ignited in Bohemia, a comet, frightening because of its immense tail, began to burn in the heavens.”¹⁰³ That author, the prolific translator and news-writer Gotthard Arthus, concluded this depiction of the celestial flare with an allusion to a separate pamphlet he had just published on the subject, and to the subsequent outpouring of treatises this vernacular work had allegedly prompted among the learned:

Around the 14th of December [1618] it disappeared in turn, with material for considering its effects on us and its signification not being left to the vulgar, but rather, after my discourse, [*The Eastern Comet, or Short and True Tract on the New Comet*], astrologers fully explained and elaborated on it in numerous erudite writings seen into print. Coins of gold and silver featuring

¹⁰⁰ David Person, *Varieties: or, a Surveigh of Rare and Excellent matters, necessary and delectable for all sorts of persons*, vol. 2 (London: 1635), p. 67.

¹⁰¹ For a recent description of the Florentine context in late 1618 and early 1619, see Goldberg, *Jews and Magic in Medici Florence*, pp. 127–128, 168–174, 177–180, 188–192.

¹⁰² Person, *Varieties*, vol. 4, p. 189, and vol. 5, p. 81.

¹⁰³ *Mercurius Gallobelgicus* XII: iii (Frankfurt: 1619), p. 104.

this comet can be seen, engraved with my phrase, "The star of a wrathful god is burning."¹⁰⁴

Arthus evidently saw his astronomical activity as the correlate of his reportage, and he expected his readers to share such views. The prefatory poem of the subsequent installment of the *Mercurius Gallobelgicus* affirmed, "You are an assiduous astronomer, you are a diligent historian," which moved the emphasis away from the rushed and apocalyptic tone of his pamphlet to the slightly longer and more measured perspective of a chronicle.¹⁰⁵

The binaries aligning initial observations, vernacular discussions, and rapid propagation, and opposing such features to the learned, Latin and less timely disquisitions by specialists are to be expected. Thus the importance of David Person's story about the Florentine astronomer, otherwise so belated, is that it places the expert and his evocative phrase at the very beginning of the news cycle, as if this obscure double of Galileo had appropriated the role of the *nuncius*, and had successfully combined priority in observation and promptness in propagation in a *lingua franca*. Put differently, Person's Florentine astronomer is a compensatory construction, at once an astrologer and a reporter, and unmatched in accuracy and celerity.

Consider a final example of this figure, likewise imagined by an Englishman, but backdated to 1610, and focused on French rather than German affairs:

The French stories speake of divers auguries and predictions of [Henri IV's] death. . . . To this may be added the speech of *Francisco Corvini* a Toscan astrologer, who the night before *Henry* the fourth was slaine, leaning upon a Balcon in Florence, which is neer upon 600 miles from Paris, and prying into the motions of the starres, he suddenly broke out of his speculation into these words; *Tomorrow one of the greatest Monarchs of Christendome will be slaine*; and the very next day the mortall stab was given by *Ravaillac*.¹⁰⁶

So James Howell recalled, in the first pages of his *Lustra Ludovici* of 1646, the assassination of the French king Henri IV by François Ravaillac in May of 1610. What the vignette captures is the peculiar meshing of the political

¹⁰⁴ *Mercurius Gallobelgicus* XII: iii, 105. The *Cometa Orientalis, kürtze und eygentliche Beschreibung des neuen Cometen* was published in Frankfurt by Sigismund Latomi in 1619.

¹⁰⁵ *Mercurius Gallobelgicus* XIII: i (Frankfurt: Sigismund Latomi, 1620) 5th unnumbered page.

¹⁰⁶ James Howell, *Lustra Ludovici, or the Life of the late Victorious King of France*, Lewis XIII (London: 1646), p. 4.

and the scientific in the spring of 1610: news of the king's death reached most Europeans just after Galileo published the *Starry Messenger*. Readers, like the fictive audience around the balcony, would have understood the clumsy formulation "one of the greatest Monarchs of Christendome" as an allusion to the traditional title of the French king, *Rex christianissimus* or *Roi Très-Chrétien*, but Howell's spectral astrologer is less easy to identify. Condemned to obscurity by his casual and almost meditative posture, and his ineffectual, one-time utterance on the very eve of the assassination of the continent's most powerful ruler, Francisco Corvini might be understood as the antitype of the rational and orderly astronomer whose news consisted, in large part, in his painstaking records of the appearances of the satellites named for the Medicis every night from January 2 to March 7, 1610.

And yet it is perhaps unwise entirely to dissociate the two figures. A preliminary title assigned to Galileo's treatise by the licensing authorities was *Astronomica Denuntiatio ad Astrologos*, which could be translated blandly as "Astronomical Announcement to Astrologers," or more menacingly as a "warning" or "summons" to the same group, suggesting not complete indifference, but rather critical engagement.¹⁰⁷ This latter mode is how the work, or an early summary of its arguments, appeared to many physicians and astrologers in Naples, among whom Don Ettore Caracciolo surely figured prominently.¹⁰⁸ For a very large German-speaking audience, by contrast, the first news of the *Starry Messenger* arrived in a format traditionally associated with astrology, the *prognosticum* or almanac of a *Schreibkalender*, and was presented by Paul Nagel, celebrated as an astrologer. Having a glass but not a telescope, Nagel could not verify Galileo's observations of the moons of Jupiter, but seemed sufficiently persuaded of their existence to propose, just four months after the publication of the *Starry Messenger*, that satellites would soon be discovered around Saturn and Mars.¹⁰⁹

¹⁰⁷ On the various titles, see most recently David Wootton, "New Light on the Composition and publication of the *Sidereus Nuncius*," *Galilaeana* 6 (2009): 61–78, on p. 64.

¹⁰⁸ For the "most bitter quarrel of all the astrologers, and many of the physicians" concerning the potential consequences of the *Starry Messenger* for astrological predictions, see the letter of Giambattista Manso to Paolo Beni, in *Opere*, vol. 10, pp. 291–296, on p. 295.

¹⁰⁹ See Klaus Dieter Herbst, "Galilei's Astronomical Discoveries Using the Telescope and their Evaluation Found in a Writing-Calendar from 1611," *Astronomische Nachrichten* 330.6 (2009): 536–539; on Nagel's career, particularly his prophecy, see Leigh T.I. Penman, "Climbing Jacob's Ladder: Crisis, Chiliasm, and Transcendence in the Thought of Paul Nagel," *Intellectual History Review* 20.2 (2010): 201–226.

While Nagel's references to Galileo's work do not suggest that his findings jeopardized prognostication, still others read it as a complement to that task, particularly as it concerned the assassination of Henri IV, and in this they are close in spirit to Howell's "Toscan astrologer." In a letter to his friend William Camden written in July 1610, the English astrologer Christopher Heydon defended one of the most famous forecasts of Henri's death, that which was made by a doctor and astrologer named La Brosse, as something more than a lucky guess, "as the blind man hits the Crow."¹¹⁰ What is more surprising than Heydon's desire to defend his own practice of judicial astrology is his reliance upon Galileo's very recent treatise and "trunk" or telescope as a means to persuade his correspondent. He concluded his argument about the astrologer's prediction, evidently with some success, with the observation that

Therefore certainly Mathematicians never err, but when they are abused by false information. I have read *Galilaeus*, and, to be short, do concur with him in opinion. For his reasons are demonstrative: and of my own experience with one of our ordinary Trunks I have told eleven stars in the *Pleiades*, whereas no age ever remembers above seven, and one of these, as *Virgil* testifieth [in the *Georgics*], not always to be seen.¹¹¹

What Heydon sought to put in a lengthy continuum aligning astrologers, astronomers and at least some of the poets who purveyed their information—all in the interest of showing the integrity of his field—Howell collapsed in the figure of his solitary observer. An elaborate catalogue of such prognostications had been assembled within a dozen years of the French king's death, but none has the focus and neatness of Corvini's bulletin, as if what he had observed that night from the balcony in Tuscany supplemented the general and dismal impression offered by the king's geniture. In this account, in other words, the Galilean telescope would have made the difference.

Thus, for instance, a doctor in Toulouse had supposedly warned the king that the stars were conspiring against him, while Helvæus Rosselin,

¹¹⁰ Cardinal Richelieu identified la Brosse as "the doctor of [Charles de Bourbon], comte de Soissons, who dabbled in mathematical and astrological arts;" see his *Mémoires*, ed. Alexandre Petitot, vol. 1 (Paris: 1823), p. 52.

¹¹¹ William Camden, *Epistolae* (London: 1691), pp. 129–130. The reference to the sometime disappearance of one of the Pleiades is in Virgil, *Georgics*, lib.4, 232–233. Galileo mentioned the variable number of the Pleiades in the *Starry Messenger*—"I say six [stars] because the seventh almost never appears"—possibly as an allusion to Aratus' formulation, "The bards count seven / But only six show plainly to the eye;" see Poochigian's translation of *Phaenomena* 257, 10, 54, and Galileo, *Opere*, vol. 3(1), p. 78.

physician and astrologer in Alsace, had written prophetic verses on his account, and Catherine de' Medici and Nostradamus had foreseen his death sometime during the twenty-first year of his reign. An almanac circulating six months before the assassination allegedly had the fatal day marked, *Dies illa, dies iræ, calamitatis & miseriæ*, but offered no further details. A series of poetic prophecies written a century earlier, for the period 1590 through 1613, was off by one year. Enigmatic verses by Nostradamus and his imitators appeared in other almanacs for that year, and had circulated widely among the people. Two *mathématiciens*, one from Besançon, the other a Scotsman, having drawn up the horoscope of the king in 1608, predicted that the king would be killed within two years. The German Johannes Rudolphus Camerarius had foreseen a violent death, but had misreckoned the date of the assassination, and one of Henri's own councilors had warned him of a dangerous illness, rather than a killer's blow, that might kill him between the winter and summer solstices of 1609–1610.¹¹² In contrast to Corvini's succinct utterance, each item in this flood of astrological information is undercut by imprecision or error.

Though there were also numerous reports, after the royal assassination, of those who had advance warning of the event days and even weeks before it took place, these accounts were invariably associated with rumors concerning the Jesuits' involvement in the murder, or with the adage *vox populi, vox dei*, where divine prerogatives were somehow propagated to an otherwise uninformed citizenry.¹¹³ Howell's "Toscan astrologer," by contrast, is outside of those obscure networks of information and power, and yet centrally connected to it, having seen in the stars, as if updating Galileo's original observations of the Medici stars, the sudden emergence of the regency of Marie de' Medici in Paris. And precisely because this figure can do no more than relate the event, having nothing to do with either its origin or its inevitable outcome, the emphasis falls on the mode of that

¹¹² Etienne Pasquier, "Lettre I, À Monsieur d'Ambleville," in *Les Œuvres d'Estienne Pasquier*, vol. 2 (Amsterdam: 1723), cols. 1057–1058.

¹¹³ For stories concerning advance reports of Henri's death, see Philippe Duplessis-Mornay, "Remonstrance à messieurs de la cour sur l'assassinat du roy," in *Mémoires et Correspondance*, vol. 11, p. 91; *Anti-Coton* (London: 1611), 51; Great Britain. Historical Manuscripts Commission, *Papers of William Trumbull the Elder 1605–1610*, vol. 2 (London: 1936) p. 313; Pierre Matthieu, *Histoire de la mort déplorable de Henry III, Roy de France et de Navarre: ensemble un poème, un panégérique et un discours funèbre dressé à sa mémoire immortelle* (Paris: 1611) pp. 85–86; Guido Bentivoglio, *Relazione della fuga di Francia d'Enrico di Borbone prencipe di Condé* (Paris: 1748) pp. 296–297. For the most elaborate explanation involving *vox populi, vox dei*, see Etienne Pasquier, "Lettre I, À Monsieur d'Ambleville," cols. 1057–1058.

enunciation.¹¹⁴ Its brevity, clarity, timeliness, and implicit circulation are all features of an idealized news report: the astrologer has supplanted the *nuncius* and the *menante*.

Upstaging the Astrologer

The astrologer appears with some frequency in early modern drama, and in many respects unifies the traits variously assigned to such figures in other genres. One of the most important examples is the Neapolitan Giambattista della Porta's comedy *L'astrologo*, published in 1606, but probably composed a decade or more earlier, and the forerunner of works such as Thomas Tomkis' *Albumazar* (ca. 1615), Pedro Calderon's *El astrólogo fingido* (ca. 1634), Thomas Corneille's *Le Feint Astrologue* (1648), John Dryden's *An Evening's Love, or the Mock Astrologer* (1668), and Aphra Behn's *The Emperor of the Moon* (1687). The drama begins with a conventional set-up, the inappropriate marriage proposal. Two rich old widowers in Naples, Pandolfo and Guglielmo, have agreed to marry each other's daughters, Artemisia and Sulpizia, once Guglielmo returns from business in Barbary. The plan is repellent both to the young ladies and to their brothers, for Pandolfo's son Eugenio and Guglielmo's son Lelio are their rivals in love. Receiving news that Guglielmo has been lost at sea, Pandolfo despairs, but hires the astrologer Albumazar, his name recalling that of the famous medieval Persian astrologer Abū Ma'shar, to manage the requisite sham.

Albumazar's scheme is to convert a worker from Pandolfo's villa, known only as *il Vignarolo* or the "vine-dresser," into the likeness of Guglielmo for twenty-four hours so that Artemisia might be bestowed by the impersonator in marriage. Albumazar craftily insists that such a transformation can be managed only in a chamber decorated with valuable silver vases, sparkling candlesticks, costly wines, and precious linen, all of which he and three fellow ruffians plan to steal after the bogus ceremony. The *vignarolo* agrees, after some hesitation, to undergo the temporary metamorphosis, but the trick goes awry when the real Guglielmo resurfaces, having been delayed by kidnapping rather than lost by drowning during his travels. He is treated as an imposter, Pandolfo loses his valuables, and the astrologer himself is defrauded by his henchmen. By the play's end, the old men have renounced their marriage plans, but have recovered their lost property,

¹¹⁴ For discussion of the actual interplay between oral and written news, however, see Pettegree, *The Book in the Renaissance*, pp. 144–146, 333–351.

the young people have been granted permission to wed each other, and the astrologer escapes without penalty.

Della Porta was well placed to examine the various impressions of the astrologer within early modern society. His *Twelve Books on the Villa*, first published in 1592, shows great familiarity with Virgil, particularly with the *Georgics*. Though that work is devoted in the main to the minutia of husbandry, an entire chapter goes beyond the usual sturdy advice about when to plant, and how to foresee storms, and argues instead for the relevance of astrology to the gentleman farmer: "On the prognostication of future plenty and dearth in fruit" bids him to take account of the zodiacal house in which the moon is found when particular constellations rise in predicting the success or failure of his crops.¹¹⁵ Like Maganza, della Porta had had numerous brushes with the Inquisition, and he had struggled to keep his investigations of the occult within the more or less acceptable bounds of natural magic. Though appearing to privilege physiognomy over astrology, in a study of the former discipline, he might have insisted on the "inanity and imagined nature" of the latter in a bid to satisfy censors, for he also included numerous astrological texts, without context or commentary in this work.¹¹⁶ Like the practicing astrologer Don Ettore Caracciolo, he was an early member of the Neapolitan Academy of the Oziosi, and like Galileo, participated in the first scientific society, the Academy of the Lynxes in Rome.

It is to be expected, then, that *L'astrologo* would capitalize on current discussions of the astrologer without providing a definitive judgment on his practice. Because it is clear from the outset that Albumazar is, to use the available oxymoron, a "real fraud," the status of astrology itself is not put into question. Upon his arrival in Naples, Albumazar proclaims,

Even if [Pandolfo] were Solomon himself, just believing in these idiocies would suffice to turn him into the world's biggest beast. Look where human curiosity, or rather asininity, will lead you. Now I, playing the astrologer—who shares something with the necromancer, and who takes a pinch from the alchemist and from the mill-maker—with the help of my dear companions, hope to leave memorable traces of our practice in his house, and I have no doubt about the outcome.¹¹⁷

¹¹⁵ Giambattista della Porta, *Villae Libri XII* (Frankfurt: 1593), pp. 254–257, on p. 254, as well as pp. 826–827.

¹¹⁶ Paola Zambelli, *White Magic, Black Magic*, p. 28, and Dooley, *Morandi's Last Prophecy*, p. 168.

¹¹⁷ Giambattista Della Porta, *L'astrologo*, in *Teatro: Tomo Terzo, Commedie*, ed. Raffaele Sirri (Naples: 2002), pp. 319–404; act I: i. Galileo's friend Michelangelo Buonarroti the

Like Chiabrera's Armenian, Albumazar appears to be of exotic provenance. Pandolfo relates to Cricca, his skeptical manservant, that "a certain German Indian, from the other side of Trebizond, from the ends of the earth, a miraculous astrologer and necromancer, has come to Naples," and proclaims, "his name is *Albumazzarro Meteoroscopico*."¹¹⁸ He later exclaims to Cricca, "Quiet, beast! His words are Arabic and Turkish."¹¹⁹ For his part, Albumazar does include a few gratuitous Latin phrases, one drawn from a depiction of a pedant with astrological pretensions in an earlier play by Pietro Aretino, in his first encounter with Pandolfo, and the other based on some phrases from the Mass.¹²⁰ Like Orazio Morandi, though in comic rather than tragic circumstances, he throws in a reference to the life-giving point, proclaiming that Guglielmo's "apheta has reached the precincts of death," a phrase mistranslated by Cricca as "he says he's dead and fetid."¹²¹

Having explained his friend's fate in terms at once reductive and persuasive to Pandolfo—"because the moon, as we said, passed from Capricorn to Aquarius and to Pisces, your Guglielmo died in the water and fish ate him"—Albumazar proposes to provide a facsimile of the drowned man.¹²² Though necromancy is briefly discussed, this option is discarded for a cheaper alternative, that of temporarily converting the *vignarolo*, who will not ask for much, into Guglielmo. This maneuver permits della Porta to insist for the rest of the play, if somewhat excessively, on the kinship of the astrologer and the dramaturge. Albumazar, like the playwright himself, assigns roles to the *vignarolo* and to his three sidekicks, he provides them with appropriate costumes and props, he stages the decoration of the fake astrological chamber, hoping to profit from such efforts, and he works in increments of twenty-four hours.¹²³ His success, like della Porta's, consists in getting others to pay for the pleasure of being deluded.

Younger also associated the astrologer with the alchemist and the mill-designer; see *La Fiera e La Tancia*, ed. Pietro Fanfani (Florence: 1860), 286.

¹¹⁸ Della Porta, *L'astrologo*, I: ii, and I: iii.

¹¹⁹ Della Porta, *L'astrologo*, I: iv.

¹²⁰ Della Porta, *L'astrologo*, I: iv. The pedant replies "Bene vivere et laetari" when asked to stop talking about astrology in Pietro Aretino, *Marescalco*, in *Commedie: nuovamente riviste e corrette*, ed. Eugenio Camerini (Milan: 1875), act II, ix, first published in 1533. Albumazar's other phrase, *in nomine planetarum, stellarum, signorum et omnium caeli caelorum*, would recall the formulaic *in nomine patris filii et spiritus sancti*, and *per omnia saecula saeculorum*.

¹²¹ Della Porta, *L'astrologo*, I: iv. See Dooley, *Morandi's Last Prophecy*, pp. 8–9.

¹²² Della Porta, *L'astrologo*, I: v.

¹²³ Della Porta, *L'astrologo*, II: iii, III: iii, and V: iii.

The particular choice of the *vignarolo* as the double of Guglielmo is worth attention, especially since the former meditates at length on how it is that he both will and will not be that absent gentleman, and how one and not the other will subsequently bed down with the serving girl Armellina.¹²⁴ In his most famous work, *On Natural Magic*, della Porta had followed the tradition of invoking Virgil's agricultural advice "to entwine elms with lusty vines"—*illa tibi laetis intexet vitibus ulmos*—to describe, without further explanation, the magician's ability to "match heaven to earth."¹²⁵ The dramatic situation of *L'astrologo*, particularly the phonetic similarity of Guglielmo with *gli olmi*, "the elms," and the blunt equation of the *vignarolo* with his vines, reads like a garbled version of that lofty convention, a mistranslation on the order of Carafulla's equation of *terremuoti* with *terra mobilis*. Given that both Cricca and the *vignarolo* establish the social distance between themselves and their employer and Abumazar by rephrasing abstract utterances in a kind of transcription based on sound, and always tending towards the literal, this sort of recasting of the Virgilian verse seems almost inevitable.¹²⁶

The question posed by Lelio, Guglielmo's son and rival in love, "But what does astrology have to do with transforming one man into another?" underlines the slightly strained association of the astrologer with the playwright, but also signals the vulgar understanding of the practice, as if to suggest that its true purpose and genuine adepts were elsewhere.¹²⁷ The socially subversive potential of astrology—the expectation that it or the stars themselves could facilitate such transformations—is addressed and thoroughly contained in della Porta's drama. The *vignarolo*, much as he initially enjoys assuming the role of Guglielmo, returns predictably to his own station by the drama's end, and is betrothed to Armellina, the agreeably coarse serving girl he has always desired. It is crucial, in fact, that when the disguised *vignarolo* is called upon to identify himself, he does so by professing his love for Armellina; the definitive proof of Guglielmo's identity, by contrast, lies in his detailed knowledge of the family's finances.¹²⁸

Pandolfo stubbornly persists in his unseemly plans for marriage and in his miserly ways until a quick epiphany in the final scene, when his prop-

¹²⁴ Della Porta, *L'astrologo*, II: ii.

¹²⁵ Virgil, *Georgics*, lib.2, 221, and *ut agricola ulmos vitibus*, in Giambattista della Porta, *Magiae naturalis libri XX* (Naples: 1589), p. 6.

¹²⁶ Della Porta, *L'astrologo*, I: iv, and II: iii.

¹²⁷ Della Porta, *L'astrologo*, II: vi.

¹²⁸ Della Porta, *L'astrologo*, IV: viii, and IV: ix.

erty, the linens and silver from the ceremonial chamber, is returned to him.¹²⁹ Here he suddenly sees that this is all that is left to him, and these goods are immediately repurposed for the marriages of the young people. While this neat use of the props implies that maintenance of the family fortune is better managed through scrupulous attention to the household economy than through scrutiny of astrological houses, the fact that Albu-mazar has been an absolute fraud serves as a safeguard of sorts for the practice. The fake astrologer, in other words, is no more representative of the genuine pursuit than was the temporary substitution of the lusty *vignarolo* for Guglielmo an adequate approximation of the Virgilian verse *illa tibi laetis intexet vitibus ulmos*.

Given the cultural resonance of the figure of the astrologer, particularly within drama, it is not surprising to see that the vignette of the ceremonial chamber reappears not just in the many plays that followed *L'astrologo*, but in encapsulated anecdotes, where it is closely associated if not with fraudulent practice, with a certain unseemly gullibility. An upscale version of this room and of the preparations participants needed to make were described at length in 1629 in a work of Tommaso Campanella, and the *menante* reporting on prognostications of Urban VIII's death in August of the following year added that the frightened pope was "anointing himself, and doing everything else advised by the friar in his book."¹³⁰ And a dramatist of even greater stature than della Porta, the gifted Ben Jonson, was said to have likewise arranged a little chamber himself, as if in acknowledgement of the tacit connection of playwrights and astrologers. Recalling a confidence made by Jonson around 1618 or 1619, the Scotsman William Drummond alleged,

He can set horoscopes, but trusts not in them. He, with the consent of a friend, cozened a lady, with whom he had made an appointment to meet an old astrologer in the suburbs, which she kept; it was himself disguised in a long gown and a white beard, at the light of dim-burning candles, up in a little cabinet, reached unto by a ladder.¹³¹

¹²⁹ Della Porta, *L'astrologo*, V: v.

¹³⁰ On this report and its antecedent, see Dooley, *Morandi's Last Prophecy*, pp. 155–157, 160, 164, and Amabile, *Fra Tommaso Campanella*, vol. 2, 149.

¹³¹ *Conversations of Ben Jonson with William Drummond of Hawthornden*, ed. with an intro. Philip Sidney (London: 1906), p. 35.

Conclusion

Ben Jonson's dimly lit "little cabinet" gives pause. Drummond's brief anecdote suggests that the poet and dramatist was capable of drawing up horoscopes, but that he himself had no faith in the practice; the trickery involved in Jonson's suburban subterfuge was thus less in the service performed, or in the goods delivered, than in the disguise he assumed. This essay has emphasized throughout the implicit rivalry between the writer and his double, the astrologer; the final section examines instances where the writer and the astrologer were not doubles, but rather one and the same person, and where the "little cabinet" was the site of both sorts of labor.

The emergent European novel, in particular, seems bracketed by two extraordinary writers who also wrote prognostications for almanacs, François Rabelais and Hans Jacob Cristoffel von Grimmelshausen. Both distinguished carefully between what the French author would call *folz astrologues* and the legitimate practitioners of the art. Rabelais, who signed the almanac he composed in Lyon in 1533 with his own name and the title "Doctor of Medicine, Professor of Astrology," would exploit in his *Third Book* the excess and ineptitude of poor representatives of his discipline by grouping them with other and evidently discredited forms of divination such as geomancy, metopomancy, chiromancy, and even more obscure arts, much as the papal bull *Inscrutabilis*, almost a century later, would put the astrologer in the company of the antique *harioli*, *haruspices*, and *vaticinatores*.¹³² Rabelais' repurposing of astrological terms to describe cookery in his *Fourth Book*, not unlike Sir Andrew's rotund reference to "the Vapians passing the equinoctial of Queubus" in conversation with a clown and with Sir Toby Belch in Shakespeare's *Twelfth Night*, is startling and satirical in that it moves the technical language of the heavens to a lowly domestic setting, but it does not question the basic premise of the stars' influence on human affairs.¹³³ Indeed, the precepts recommended

¹³² M.A. Screech, "Some Aspects of Rabelais' *Almanachs* and of the *Pantagrueline Prognostication*," *Etudes Rabelaisiennes* 11 (1974): 1–7, on 2, and François Rabelais, *Le Tiers Livre*, Chapter xxv, in *Les Cinq Livres*, eds. Jean Céard, Gérard Defaux, Michel Simonin (Paris: 1994), pp. 699–705.

¹³³ Rabelais, *Le Quart Livre*, Chapters x and lxiii in *Les Cinq Livres*, 957, 1191, and John C. Lapp, "Three Attitudes towards Astrology: Rabelais, Montaigne, and Pontus de Tyard," *PMLA* 64.3 (1949): 530–548, on p. 532.

for Gargantua's education include routine attention to comets and to the "figures, situations, aspects, oppositions, and conjunctions of the stars."¹³⁴

That said, Rabelais' engagement with astrology is presented as learned conjecture: Pantagruel recognizes comets, for example, as a sometime presage of the death of an illustrious man on the authority of Macrobius, and because the heavens seem to welcome certain "noble souls."¹³⁵ In condemning those who imagined astrology as of significance only for "kings, popes, and great men, rather than for the poor and the suffering," Rabelais appeared to endorse the quotidian and popular format of the almanac, and especially its emphasis on the maintenance of health, but without offering the certitude of causal explanations.¹³⁶ His almanac of 1533, not surprisingly, warned that the month of May would doubtless see considerable changes in both kingdoms and in religion, because of "the frequent conjunctions of the Moon with Mars and Saturn," but likewise insisted on the inscrutability of "the secrets of the close counsel of the Eternal King," who was free to modify all things at His pleasure.¹³⁷

The work of Grimmelshausen embodies many of the features latent in Rabelais' treatment of astrology. Born near Frankfurt in 1621, Grimmelshausen drew upon his experiences of the Thirty Years War in his *Simplicissimus*, first published in 1668, and in its many sequels; this epic is the correlative of the casual cry of David Person's astrologer, "Woe unto Germany." The *Simplicissimus* cycle, like all picaresque novels, has as its prime focus the adventures of "the poor and the suffering;" the latter come into frequent contact with rulers and "great men," through both the vicissitudes of war and the protagonists' own attraction to power. Like its Spanish prototypes, *Simplicissimus* often refers to astrologers and to astrology; unlike those antecedents, however, this novel and its sequels have an astrological substructure. The relentless fulfillment of prophecies throughout the cycle, the abrupt shifts in the plot, and even the character traits, motivations, and occupations of many of the characters are strongly conditioned, if not entirely determined, by the stars.¹³⁸

¹³⁴ Rabelais, *Gargantua*, Chapter xxi, in *Les Cinq Livres*, pp. 123–125, and Lapp, "Three Attitudes," pp. 533–534.

¹³⁵ Rabelais, *Le Quart Livre*, Chapter xxvii, in *Les Cinq Livres*, pp. 1027–1029.

¹³⁶ François Rabelais, *Pantagrueline Prognostication Pour L'an 1533*, ed. M.A. Screech (Paris: 1974), p. 14.

¹³⁷ Rabelais, *Pantagrueline Prognostication*, p. 41.

¹³⁸ See Klaus Haberkamm, "Allegorical and Astrological Forms in the Works of Grimmelshausen with Special Emphasis on the Prophecy Motif," *A Companion to the Works of Grimmelshausen*, ed. Karl F. Otto (Rochester, NY: 2003), pp. 93–145.

A number of factors reduce the visibility of this astrological foundation, and thus contribute to the pleasant illusion of characters with greater agency and an autonomous plot. The sheer complexity of the astrological scheme, the long narrative arc of the *Simplicissimus* cycle, the frequent changes in the tenor of the events and in the protagonists' diction, and the casual deployment of terms such as "prognosticate," "mercurial" and "jovial," all serve to obscure the influence of the stars, and simultaneously to suggest the domestication of that framework. The almanacs associated with Grimmelshausen in these years, those published with the serial title *Wunder-Geschichten Calender* and the single *Ewig-währender Calender*, likewise maintain the dual impression of the remoteness and the relevance of astrology.¹³⁹ The former group, marketed by Grimmelshausen's publisher, is now considered to be an imitation of his work. They are legitimate as almanacs: they display in columns, as was conventional, the day of the week, the name of the saint associated with the date, the major feast days, astronomical information such as the Zodiacal sign in which the moon then was, its phases, and the aspects of the planets, and finally a series of prognostications, stories, and conversations involving *Simplicissimus* and other picaresque characters. In their concocted association with the *Simplicissimus* cycle, they are fraudulent.

The converse is true for *Ewig-währender Calender*, which Grimmelshausen is known to have composed. Its connection to the novel cycle is legitimate, but the almanac itself is a parody of the genre. Chaotic, out of date, and entirely without order, it is of no use as an astrological framework. Interestingly, one of the columns within the calendar featuring narrative material, "Simplicissimus' Discussion with his Mother concerning Rustics' or Old Wives' Beliefs," is devoted to the question of weather lore, and by implication to the contested terrain of the astrologer.¹⁴⁰ *Simplicissimus'* mother has no need of the almanac or of "those great Herr Doctor

¹³⁹ See Rosemarie Zeller, "Grimmelshausen's *Ewig-währender Calender*: A Labyrinth of Knowledge and Reading," *A Companion to the Works of Grimmelshausen*, ed. Karl F. Otto (Rochester, NY: 2003) pp. 166–199, and Dieter Breuer, "In Grimmelshausen's Tracks: The Literary and Cultural Legacy," *A Companion to the Works of Grimmelshausen*, ed. Karl F. Otto (Rochester, NY: 2003) pp. 231–266, on pp. 231–232. The *Europäischer Wundergeschichte Calender* is available online under "journals" at <http://www.urmel-dl.de/content/below/home.xml>. Hans Jakob Christoffel Grimmelshausen, *Des Abenteurlichen Simplicissimi Ewig-währender Calender* (Nuremberg, Ger: 1670) is available online at Wolfenbütteler Digitale Bibliothek <http://www.hab.de/bibliothek/wdb/>. *Des Abenteurlichen Simplicissimi Ewig-währender Calender* is available online in the Wolfenbütteler Digitale Bibliothek.

¹⁴⁰ *Ewig-währender Calender* (Nürnberg: 1670). The conversation concerning almanacs, *Simplicissimi Discursus mit seiner Mutter die Calender und Bawren oder alter Weiber Prac-*

Calender-makers," for she relies on the behavior of animals—biting flies, cattle bellowing as they return to their stalls, fish leaping from the water—to warn her of wind and rain.¹⁴¹ These rules have a rough vernacular lyricism, one which masks their distance from their classical source. Her formulations *Wann die Fliegen*, *Wann die Ganz*, *Wann die Kinder*, *Wann die Flamm* are drawn from a classical source, Theophrastus' *On Weather Signs*, which begins with precisely the sort of indications she distrusts, those favored by the *Sternguckern* or "staroscopers."¹⁴²

For his part, Simplicissimus defends almanacs and the meteorological predictions of the learned astrologer, expressing skepticism for the authority of these animals, referring instead to the list of signs offered in Erasmus' *On Copiousness*, and presenting a catalog differing only slightly from that offered in 1615 in Wolfgang Hildebrand's *Natural Magic*.¹⁴³ Unlike his mother, who does not realize that her spontaneous citation of animal lore is a rustic reformulation of precepts from Theophrastus, Simplicissimus knowingly recites the Erasmian passage, but never recognizes that it is itself a rhetorical amplification of Pliny's attempt to pare down the elaborations in the *Georgics* to a pertinent minimum, or that Virgil's poem in its turn is a lyrical and more orderly version of *On Weather Signs*. The significance of the *mise en abyme*, of course, is that despite their apparent opposition, he and his mother, like the astrologer and the peasant, draw from the same source, and articulate views scripted for them by a long literary tradition.

tict betreffend, is in the third column of even-numbered pages from 40–90. See also the discussion in Zeller, "Grimmelshausen's *Ewig-währender Calender*," pp. 178–180.

¹⁴¹ *Simplicissimi Discursus*, pp. 44, 46, 48, 50.

¹⁴² Theophrastus, *On Weather Signs*, 1,15, 1,19, 1,23, 3,39, 3,42; *Simplicissimi Discursus*, p. 50.

¹⁴³ *Simplicissimi Discursus*, pp. 80, 82, 84.

CHAPTER TEN

PICTURING THE STARS: ASTROLOGICAL IMAGERY IN THE LATIN WEST, 1100–1550

Dieter Blume

Despite the famous title of the book by Jean Seznec—"The survival of the Pagan Gods"—in the field of astrology there was indeed no survival of the ancient gods.¹ In the earlier Middle Ages there existed no veritable occupation concerning astrology until a new interest arose forcefully during the 12th century. It wasn't until the 13th century that a new tradition of astrological imagery evolved based on the Latin translations of Arabic handbooks for this new "science". But before following the line of this cultural development I would like to discuss the prominent part that the German scholar Aby Warburg played in the research of Renaissance astrology.

Aby Warburg and Astrology

The question of Astrology's significance for Renaissance art is indissolubly bound to the name of Aby Warburg. He gave a key interpretation of the cryptic frescoes that had been uncovered in the early 19th century in a room of the Palazzo Schifanoia in Ferrara. His speech at the Tenth International Conference of Art History in Rome in 1912 made him famous and had a formative influence on our idea of astrology-based iconographic programs, although the frescoes happened to be a particularly erudite special case.² We will thus turn now to these paintings and especially to Warburg's role.

After the publication of his essays on Florentine painting (on early Netherlandish painters in Florence and on Francesco Sassetti) around

¹ Jean Seznec, *La Survivance des dieux antiques*, Studies of the Warburg Institute, vol. XI (London: 1940), English translation as *The Survival of the Pagan Gods: Mythological Tradition in Renaissance Humanism and Art* (Princeton: 1953).

² Aby Warburg, "Italienische Kunst und internationale Astrologie im Palazzo Schifanoia zu Ferrara," in *L'Italia e l'arte straniera. Atti del X Congresso internazionale di storia dell'arte in Roma, 1912*, (Rome: 1922), pp. 179ff; reprinted, among other places, in Aby Warburg, *Gesammelte Schriften, Studienausgabe*, vol. 1, 1 (Berlin: 1998).

1908 Warburg began looking at astrological themes. He travelled to Rome in October to consult manuscripts in the Vatican Library. In his diary we find that he was particularly fascinated on this trip by the cupola mosaic of the Chigi chapel in the church of Santa Maria del Popolo, drawn by Raphael.³ The mosaic (Fig. 10.1) depicts God the Father in the Zenith as the one who, with a dramatic gesture, governs the motions of the heavens.



Fig. 10.1: Rome, S. Maria del Popolo, Raphael, Dome of the Chigi Chapel

³ Ernst H. Gombrich, *Aby Warburg: An Intellectual Biography* (London: 1970), p. 248.

In the compartments below there are angels who direct the planets and their course. The planets as the pagan rulers of the cosmos appear in their ancient dress but are integrated in the hierarchic edifice of the Christian heaven at a subordinate position. The Renaissance here has not only replaced the ancient Gods in their original form, but has managed to connect in harmony ancient cosmology and Christian faith. A year later, in October 1909, in a book by the humanist Franz Boll who specialized in ancient classical scholarship, Warburg ran across a text that unlocked the significance of the Palazzo Schifanoia frescoes at a single stroke. Boll had in his recently-published book *Sphaera* (1903) undertaken to study the reception of Greek astronomy in Middle Eastern culture and to reconstruct the lost work on the *Sphaera barbarica* by the Persian writer Teukros.⁴ For the appendix the orientalist Karl Dyroff had translated the descriptions of the various decans made by the Arab astrologer Abū Maʿšar. Franz Boll's book must have fascinated Warburg for several reasons, because here he found explained, with philological precision, how the mythical figures of the Greek constellations had been taken up by other cultures and subjected to ever greater variations. Boll was able to demonstrate the reflections of the *Sphaera barbarica* in Western medieval manuscripts and their illuminations. From this it was clear that much knowledge of Greek astronomy and astrology had come to the West only indirectly, through the filter of oriental adaptations and revisions. Much that had previously seemed to be incomprehensible now made sense. There now appeared to be a tradition that arose from Greek astronomy and meandered across countless intermediaries in Persian, Arabic, Hebrew and following some crude translations during the Middle Ages, passed into the European Renaissance. In spite of all modifications, demonising and magical practices, there remained, so Warburg thought, an ancient core that in the Renaissance would appear again and would shine once more with new splendour, for example in Raphael's drawings for the Chigi chapel.

The Palazzo Schifanoia

Borso d'Este, duke of Ferrara from 1450 to 1471, had built a two-storey palace in the 1460s as a summer residence on the outskirts of the city. The great hall was painted by the Ferrarese artists Francesco Cossa, Ercole

⁴ Franz Boll, *Sphaera: Neue Griechische Texte und Untersuchungen zur Geschichte der Sternbilder* (Leipzig: 1903).

Roberti and others between 1469 and 1470.⁵ The decoration program of the frescoes transformed the room into an open loggia resting on richly decorated ancient pilasters and presenting fictive vistas over the city and countryside. There we see the duke in the act of carrying out the business of enforcing his rule as well as a variety of courtly pleasures, wherein the various types of hunt occupy a significant portion. In the background we see farmers engaging in their country occupations, such as harvesting grapes, making hay, etc. Above this layered landscape panorama there abruptly appears, without any intermediate passage, a zone of dark blue as the night sky, against which the bright disk of the sun stands in stark contrast. The sun is visible shining underneath the signs of the zodiac. The signs of the zodiac are portrayed as great naturalistic figures which in the examples of Aries (Fig. 10.2) and Taurus (Fig. 10.3) seem situated in a wide path springing over the sun. On their bodies the stars belonging to this constellation are depicted, in their exact positions.

The basis for the iconographical program is very obviously the course of the year. Correlated with the real movement of the sun, are the picture fields, arranged counter-clockwise so that the sequence runs from right to left. A painted decoration which shows in vivid pictures the course of the year was very widely distributed throughout European courts in the 15th century. We find something comparable for example in the calendar illustrations of the *Très riches heures* of Jean de Berry, or in the so-called "Torre Aquila" of the Castello del Buon Consiglio, the bishop's palace in Trento.⁶ The program in Ferrara, however, is expanded in a highly learned fashion and very concretely connected

⁵ On these frescoes see recently Philippe Morel, *Mélissa, Magie, astres et démons dans l'art italien de la Renaissance* (Paris: 2008), chap. 2, pp. 102–184. Furthermore, *Atlante di Schifanoia*, ed. Raniero Varese (Modena: 1989), esp. Kristin Lippincott, "Gli affreschi del Salone dei Mesi e il problema dell'attribuzione," pp. 111–139, as well as Claudia Cieri-Via, "I trionfi, il mito e l'amore: la fascia superiore dei Mesi negli affreschi del Palazzo Schifanoia," pp. 37–55. *Il Palazzo Schifanoia a Ferrara*, ed. Salvatore Settis and Walter Cupperi (Modena: 2007). Interesting considerations also in Peter Bell, "Regent unter dem Himmel. Die Sala dei Mesi des Palazzo Schifanoia in Ferrara als Modell eines astrologischen Weltbildes," in *Weltbilder im Mittelalter: Perceptions of the world in the Middle Ages*, ed. Philipp Billion, Nathanael Busch, Dagmar Schlüter, Xenia Stolzenburg (Bonn: 2009), pp. 1–27.

⁶ Concerning the *Très Riches Heures*, in the Musée Condé in Chantilly: Raymond Cazelles, Johannes Rathofer, *Das Stundenbuch des Duc de Berry* (Luzerne: 1988). Millard Meiss, *French Painting in the Time of Jean de Berry: the Limbours and their Contemporaries* (New York: 1974), pp. 209ff. Dieter Blume, *Regenten des Himmels: Astrologische Bilder in Mittelalter und Renaissance* (Berlin: 2000), pp. 149ff. On the Adlerturm in Trento: Enrico Castelnovo, *I Mesi di Trento: Gli Affreschi di Torre Aquila et il Gotico internazionale* (Trento: 1986). Steffi Roettgen, *Die Wandmalerei der Renaissance in Italien* (München: 1996), pp. 28ff.



Fig. 10.2: Ferrara Palazzo Schifanoia, Sala dei Mesi, March with Aries

with astronomical and astrological meaning. The depiction of all the positions of the single stars in each constellation is here an important indicator. The field of each sign of the zodiac is divided by golden lines into three equal segments, in which a further very strange image is to be found. These images are clearly done in a smaller size and in contrast



Fig. 10.3: Ferrara Palazzo Schifanoia, Sala dei Mesi, April with Taurus

with the familiar zodiac signs, show no star positions. They represent, as Aby Warburg was the first to recognize, the Indian decans, as explicated in the “Great Introduction” (*Liber introductorii maioris*) of Abū Maʿšar. This astrological handbook written in Baghdad during the 9th century

did not exercise its greatest influence until more than three hundred years after its composition.⁷ In the 12th century it was twice translated into Latin and passed for one of the most authoritative astrology handbooks in the Latin West. The basis of this success lay in the joining of a detailed theoretical foundation for astrology, based on Aristotle's nature philosophy, with a comprehensive account of all the areas of astrology. In the chapter regarding the signs of the zodiac Abū Ma'šar provided a synopsis of the various versions of the decans among the Persians, the Indians and the Greeks. Although this compilation contained many lacunae and uncertainties, it nonetheless attempted to systematize the remarkable variety of the different traditions.

The decans are figures assigned to each 10 degrees of the ecliptic. Originally they were related to the constellations that rose above the horizon along with the zodiac signs.⁸ For this reason Abū Ma'šar listed for the Greek decans also the fragments of known constellations, such as the left hand of Cassiopeia or the tail of Piscis Austrinus. In more mature astrology the decans by themselves represent the power and importance of a particular section of the zodiac. They are thus only indicative signs for an astrological power and do not correspond to any constellation in the sky. Abū Ma'šar was very clear about this. Also the *Picatrix*, an astrological handbook translated from Arabic into Spanish in the 13th century and later into Latin, insists that there are two kinds of figures in the heavens. On the one hand are the constellations and, on the other, the figures used by the Indians.⁹ Marsilio Ficino, who was particularly interested in the magical aspects of astrology, went even further and distinguished between the visible figures of the constellations and the invisible but imaginable figures of the Indians, Egyptians and Chaldeans.¹⁰ These texts are all talking about the Indian decans as pictures, which only represent

⁷ Blume 2000 (as in n. 6), pp. 22ff as well as Richard Lemay, *Abu Ma'shar and Latin Aristotelianism in the Twelfth Century, The Recovery of Aristotle's Natural Philosophy through Arabic Astrology* (Beirut: 1962). Critical edition: Abū Ma'šar (Albumasar), *Liber introductorii maioris ad scientiam iudiciorum astrorum*, ed. Richard Lemay, 9 vols. (Naples: 1995).

⁸ Auguste Bouché-Leclercq, *L'astrologie grecque* (Paris: 1899), pp. 215ff. Compare Morel 2008 (as in n. 5), pp. 129ff.

⁹ *Picatrix. The Latin version of the Ghayat Al-Hakim*, ed. David Pingree (London: 1986), II, 2.

¹⁰ Marsilio Ficino, *De Vita*, III, 18, ed. A. Biondi, G. Pisani (Pordenone: 1991), p. 332. Morel 2008 (as in n. 5), pp. 131ff. Compare also Nicolas Weill-Parot, *Les 'images astrologiques' au Moyen Âge et à la Renaissance, spéculations intellectuelles et pratiques magiques, XII–XV siècles* (Paris: 2002) and Daniel P. Walker, *Spiritual and Demonic Magic from Ficino to Campanella* (London 1958).

the astrological potential of a particular portion of the zodiac. According to the astral magic that involved Marsilio Ficino and a wide range of other scholars in the 15th century, these images of the Indian decans assume a central importance and acquire the function of talismans. This is obviously also the reason why in Ferrara the series of Indian decans was chosen to accompany the zodiac signs. In any case, the great astrological significance of the zodiac is especially emphasized in these frescoes, which could also obviously be utilized for the purposes of star magic. The division into three segments, clearly marked on the zodiac with golden lines, is often taken up also in the lower picture area (and this is especially clear in the Jupiter-Cybele picture as well as in Vulcan). In each of the three picture segments that are defined compositionally and by their given function, there appears a portrait of duke Borso. Thus the deeds of the duke, illustrated in the lower register, are put in a direct correlation with the influence of the stars and the decans.¹¹

The First Decan of Aries

The prime example Aby Warburg used was the first decan of Aries (Fig. 10.4), which had the following characteristics according to Abū Maʿṣar: "The Indians say that in this decan a black man with red eyes ascends, of large stature, outstanding courage and great nobility; he wears a great white garment bound in the middle with a rope; he is wrathful, stands erect, watching and observing."¹² The fresco expresses this figure almost perfectly, except that the white garment is torn in various places and the figure has the end of the rope in hand. Warburg put much effort into the idea of identifying a metamorphosis of the Greek constellation Perseus in this figure. His point of departure was the so-called *Astrolabium Planum* of Johannes Engel, which had been printed in Augsburg in 1488 with woodcut illustrations. There he found the description and depiction of a figure for each single degree of the zodiac, based on a theory of the Paduan astrologer Pietro D'Abano. The first, tenth and twentieth thus expressed the decans in question. In the first degree of Aries it was a man with a sickle and a crossbow. That has nothing to do with the Ferrara frescoes, but in addition to this there are three images referring to the single decan segments. We see a man with a turban, bearing a scimitar. Warburg considered this to

¹¹ Bell 2009 (as in n. 5), pp. 9ff.

¹² Warburg 1912 (as in n. 2), p. 184.



Fig. 10.4: Ferrara Palazzo Schifanoia, Sala dei Mesi, Detail, First Decan of Aries

be a decan figure and recognized Perseus with a Phrygian cap and harp.¹³ However, the accompanying text identifies these figures clearly as the planet Mars, to which the first decan of Aries is assigned. In an Indian text of the 7th century the first decan of Aries carries a double hatchet, just as in the Bianchini Planisphere, a Roman marble tablet. Behind all these images Aby Warburg noticed a transformation of the ancient hero, although Perseus is mentioned by Abū Maʿšar for the first time in the third decan

¹³ Warburg 1912 (as in n. 2), pp. 183f.

of Aries. Thus he seemed to see a line of tradition proceeding all the way to Renaissance Ferrara from the culture of ancient Greece, through Persia, India, Arabia, the Latin translation of Abū Maʿšar in Spain, the writings of Pietro d'Abano. He indicated all the relevant places on a map to make the transmission routes more clear. This was the map which particularly struck Fritz Saxl at their first meeting. Warburg later called this line of tradition "for the present the only marked-out route (vorerst nur trassierten Wanderstraße): Cyzicus – Alexandria – Oxene – Toledo – Rome – Ferrara – Padua – Augsburg – Erfurt – Wittemberg – Goslar – Lüneburg – Hamburg" (1926).¹⁴ Concerning Perseus henceforth he spoke of a cultural wanderer with a seven-fold travel coat. He often used this image to represent the transformation of ancient culture, the crowding out of Greek rationality by oriental superstition and the regaining of ancient clarity in the Renaissance. Even if Warburg's considerations at this point were entirely false, it was this part of his interpretation which had the greatest impact on the following generation of researchers. Warburg demonstrated the survival of ancient traditions in the Middle Ages and the especial relevance of astrology again and again by using the same series of pictures concerning the first decan of Aries in Ferrara. Thereby he made very clear the continuity of the ancient traditions across all interruptions and their long lasting formative power. Warburg's considerations opened up an entire field of research and inspired numerous inquiries. His theses contributed to an enormous widening of perspective, and entire areas that had once remained on the periphery became the centre of attention. He also redefined the formation of popular superstitions as part of the foundation of high culture within an all-embracing cultural development. In this respect he gave the study of the Renaissance a decisive stimulus.

However, the learned scholars who worked out the ingenious program of these frescoes for Borso d' Este, chose the strange figures of the Indian decans out of admiration for the superior Arabic astrology. From the reading of *Picatrix* they knew about the significance of this exotic series of figures and they were interested apparently above all in the magical applications of these representations. In the basic handbook of Abū Maʿšar they found the detailed descriptions necessary for the depiction in painting. But the decan figures in Palazzo Schifanoia do not entirely agree with the descriptions in Abū Maʿšar. In spite of intensive research, still today we do

¹⁴ Aby Warburg, "Orientalisierende Astrologie" (1926), in: Aby Warburg, *Gesammelte Schriften, Studienausgabe*, vol. 1, 1 (Berlin: 1998), p. 565.

not know the exact source of these figures.¹⁵ There is a similar iconography in various manuscripts, but numerous striking differences remain. We must therefore conclude that the specific iconography of the decan figures in Ferrara was developed for this ambitious fresco decoration.

The Ancient Gods

A further particularity of this fresco cycle is the exclusive concentration on astrology of the fixed stars, where the ascendant, i.e., the degree of the zodiac that rises directly over the horizon, assumes central importance. The planets, which in astrology otherwise play the major role and which therefore may be found in prominent places in all other astrological picture programs, are here in Palazzo Schifanoia entirely displaced! In the upper register, situated abruptly over the dark zone of the heavens, ancient gods drive richly decorated vehicles, as in a pageant. They may be seen before a wide landscape, which is distinguished by bizarre and fantastic forms, very different from the landscape in the lower register of the painting. Here again, it was Warburg's merit to have indicated the relevant underlying texts. The Roman author Manilius, in his didactic poem entitled *Astronomica*, assigned a deity as a protector to each sign of the zodiac, who would rule the relevant section. The twelve Olympic deities no doubt were meant to embody the astrological power contained in the particular sign. Both Marsilio Ficino and Lorenzo Bonincontri (an astrologer in Lorenzo de' Medici's court) expressed themselves in the same way and refer likewise to the didactic poem of Manilius, which had been rediscovered by Poggio Bracciolini in the beginning of the 15th century.¹⁶ The ancient gods in the upper picture zone are accompanied by numerous figures and secondary episodes, arranged on the right and left of the triumphal wagon as well as in the background. These are mythographical elaborations, which give more characteristics of the gods, and which explain the particular gifts they offer. Thus, near Minerva we find Weaving and Learning, near Venus we find the three Graces and various lovers, near Apollo we find the nine Muses on Parnassus as well as the tripod from the Temple of Delphi, near Mercury the decapitation of Argos, and near Jupiter and Cybele the story of Attis, and finally near Vulcan (Fig. 10.5) the

¹⁵ Morel (as in n. 5), pp. 120ff. Marco Bertozzi, *La tirannia degli astri, Gli affreschi astrologici di Palazzo Schifanoia* (Livorno: 1999).

¹⁶ Marcus Manilius, *Astronomica*, II, 439ff. Morel 2008 (as in n. 5), pp. 106ff.

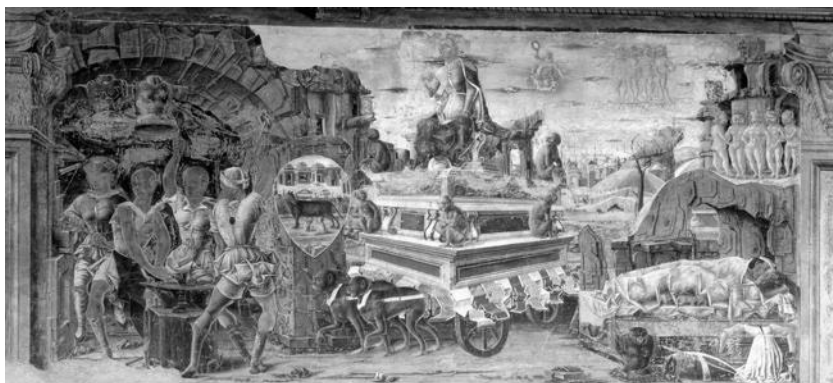


Fig. 10.5: Ferrara Palazzo Schifanoia, Sala dei Mesi, Detail of the upper Register with Vulcan

love bed of Mars and Venus, and so forth. The information appears largely to be drawn from the basic mythological handbook by Giovanni Boccaccio entitled *Genealogie Deorum Gentilium*, which circulated from the end of the 14th century.¹⁷ Here Warburg was again in error when he referred to the exactly contemporaneous depictions of the planets' children, which actually have nothing to do with the frescoes.¹⁸ Until today and even in recent publications you can find this misunderstanding.

Only a few texts were used as the bases and primary information sources for the painting cycle in Ferrara—namely, Manilius, Abū Ma'shar, *Picatrix* and Boccaccio. The descriptions of the mythographical texts as well as the astrological treatises are translated into painting with extreme detail. The texts, occasionally ponderous, rich in long discourses, with all their copious information, are thus forced into a vivid pictorial vision. On the walls of a room like this, in the context of a culture characterized by court ceremonial, humanistic learning achieves representative and finally even legitimizing character. Among the surviving wall paintings of the early Renaissance, the humanistic view of the ancient world is nowhere else so elaborately expressed.

The origins of the ancient gods, with their histories sung by the ancient poets, could be shown in all their detail since Manilius's didactic poem established an astrological connection. So mythography and astrology

¹⁷ Cieri Via 1989 (as in n. 5), *passim*.

¹⁸ Warburg 1912 (as in n. 2), pp. 181f. On the planets' children, Blume 2000 (as in n. 6), pp. 158ff and below.

are placed on an even level in these paintings. In this respect, ancient mythology was re-valued by the relation to astrology. These paintings share an argument with Giovanni Boccaccio who demonstrates by the help of astrology that the ancient poets sought to express deeper truths in the guise of myths and not just follow their fantasies. We will return to this concept.

The Revival of Astrology in the 12th century

The research of Aby Warburg made the frescoes in Palazzo Schifanoia in Ferrara famous; but with this special case in mind it is not easy to understand the history of astrological pictures. We would have to go down other paths and much further back in time. Since the Carolingian calendar reform in the 9th century the knowledge relating to the *computus*, the scientific calendar reckoning, was once more carried out intensively within European cloisters. An interest in astronomical questions growing in part out of this developed over the course of the 10th century. It was at first exclusively directed to cosmology, and aimed at gaining a rationally grounded understanding of the universe. Astrology therefore was regarded with new interest.¹⁹ The observable wanderings of the heavenly bodies, especially the planets, only through astrology received a useful role in the arrangement of the cosmos. They transmitted the will of God and his plan of Creation to the earthly realm. This led in the 12th century to an intensive involvement with astrological questions as well as to a systematic translation of Arabic handbooks into Latin. The foundation was laid for a new understanding of the starry sky, which the development of European science would powerfully influence. In the forewords by the translators the blindness of the ignorant Latin culture was decried (*latinitatis ignorantie cecitas*).²⁰ *Ex intimis Arabum thesauris*, out of the deepest treasury of the Arabs, the hidden wisdom had been retrieved with great

¹⁹ Blume 2000 (as in n. 6), S. 18ff. Dieter Blume, Mechthild Haffner, Wolfgang Metzger, *Sternbilder des Mittelalters—Der gemalte Himmel zwischen Wissenschaft und Phantasie*, Part I: 800–1200, 2 vols. (Berlin: 2012). Dieter Blume, "Wissenschaft und Bilder—Vermittlung antiken Wissens im Frühmittelalter," in: *Geschichte der bildenden Kunst in Deutschland*, vol. 1: *Karolingische und Ottonische Kunst*, ed. Bruno Reudenbach (Munich: 2009), pp. 522–551.

²⁰ Plato of Tivoli in the foreword to the translation of *De motu stellarum* by al-Battānī, cited in Marie-Thérèse d'Alverny, "Translations and Translators," in *Renaissance and Renewal in the Twelfth Century*, ed. R.L. Benson and G. Constable (Cambridge/Mass.: 1982), p. 451.

effort.²¹ Hermann of Carinthia, one of the most ambitious translators of the 12th century, in his writing *De essentiis*, criticized the simplicity of the physicians, who looked only to the four sublunary elements, as though the *ministerium*, as he put it, the “office” of the heavenly world, were entirely superfluous, and as though only the lowest portion of the universe had a useful function.²² Astrology described the law binding the earthly world to the heavens. The stars thus become the intermediaries which transfer divine power to the earth. Herein lies the particular significance that the learned of the 12th century attributed to astrology. It was for them both *veterum limen* and *speculum modernorum*, the highest art of the ancients and a mirror to the moderns, as an anonymous translator in Sicily put it around 1160, in a foreword to a translation of Ptolemy’s *Almagest* from Greek into Latin.²³

Astrology had above all a conceptual character, as a theoretical system to explain the cosmos. The circle of persons who translated these theories into practice was still relatively small. Only six can be identified in the sources of the 12th century for having drawn up horoscopes themselves.²⁴ The planets were seen in cosmological discourse of the 12th century as soul-bearing entities, whose role is to serve as intermediaries between the upper and the lower worlds. They are made of a fifth element and are considered to be higher beings. It was Bernardus Silvestris in Tours who wrote down the first and already very detailed descriptions of the planets. In the 1240s he completed his “Cosmographia,” a comprehensive and scientifically grounded portrayal of the cosmos, which very deliberately drew together the ideals of the *scientia nova* with the literary qualities of the ancient poets. The art of the astronomy was for him the key to an understanding of the world and a distinguished feature of mankind: “Simple beasts have slow understanding and bow their heads before them with their faces pointed downwards, but men alone, in a stance that testifies to the greatness of their spirit, raise their heads toward the stars, so

²¹ Hermann von Carinthia, *De Essentiis*, 58r D, Edition by Charles Burnett, *Studien und Texte zur Geistesgeschichte des Mittelalters*, vol. XV (Leiden—Köln: 1982).

²² Hermann von Carinthia, *De Essentiis*, 74r G/H.

²³ Cited by Charles Homer Haskins, D.P. Lockwood, “The Sicilian Translators of the Twelfth Century and the First Latin Version of Ptolemy’s *Almagest*,” in *Harvard Studies of Classical Philology* 21 (1910): 99.

²⁴ J.D. Lipton, *The Rational Evaluation of Astrology in the Period of Arabo-Latin Translation*, c. 1126–1187 A.D., Diss. University of California, Los Angeles, 1978, pp. 205ff. Compare Jean-Patrice Boudet, *Entre Science et Nigromance: Astrologie, Divination et Magie dans l'Occident médiéval (XII^e–XV^e siècle)* (Paris: 2006).

they can take the laws of the heavens and their never-ending movements as a model for their lives.”²⁵ In the course of a trip through the spheres, which the personified allegory of Nature takes, and which is also a lesson on the secrets of the cosmos, Bernardus Silvestris describes the planets as individually acting entities, each a sort of heavenly daemon, who rule in their own sphere. They are reasonable beings who nonetheless know neither death nor pain nor emotion. At the same time he tries to give a clear idea of the appearance of these heavenly rulers. Jupiter, for example, is described as a king: “In his council chamber Jupiter shone in kingly majesty; in his right hand he held a sceptre, in the left the set of scales wherewith brings in balance now the matters of humanity now the matters of the higher beings.”²⁶ Here we encounter not the ancient lord of the gods armed with thunderbolts but a medieval ruler with his insignia. In astrology Jupiter is characterized by mildness and goodwill; to him is attributed the ability to counter the negative influence of other planets. This aspect Bernardus suggested in a congenial way by the attribute of the scales. Clearly, the newly developed knowledge of astrological science influenced the idea of the appearance of the planets, so the description of this appearance can also serve as introductions to the astrological role of the planet.

Pictures of the Planets

The step to a visual depiction in the circle of Bernardus Silvestris, connected with the cathedral schools of the 12th century, was not yet taken. Special conditions were necessary, which apparently first existed half a century later in a courtly setting. As far as we know, this happened at the court of the Hohenstaufen emperor Friedrich II in Southern Italy. Friedrich II and his court are known for many particularly ambitious undertakings in the realm of science. The emperor himself wrote in a letter of 1231 to the professors of the University of Bologna, that the presence of science is necessary for establishing the greatness of a royal administration, so as to prevent justice from being diminished by ignorance and intemperance. Science, so he wrote, is an essential precondition for maintaining justice and must therefore also be an integral

²⁵ Bernardus Silvestris, *Cosmographia*, II, 10, Verse 27ff., Edition by Peter Dronke (Leiden: 1978), p. 141. Compare also Brian Stock, *Myth and Science in the Twelfth Century: a Study of Bernard Silvester* (Princeton: 1972) as well as Blume 2000 (as in n. 6), pp. 26ff.

²⁶ Bernardus Silvestris, *Cosmographia*, V, 9, Edition Dronke p. 128.

part of the concept of the state.²⁷ Numerous scientific texts were copied in the environment of this court, and subsequently diffused. From some of these texts, such as the so-called *Medicina antiqua* or the *De arte venandi cum avibus* composed by the emperor himself, luxurious editions with illustrations were made. These costly manuscripts were shown along with other treasures in order to enhance the glory of the court and create an impression among special guests. Thus, science, in the form of precious books illustrated with gorgeous pictures, could be deployed for imperial courtly representation.

In the 1230s an otherwise unknown figure named Georgius Fendulus, who called himself a priest, philosopher and courtier, put together excerpts from Abū Maʿšar's basic astrology textbook relating to the description of the planets and the zodiac. These relatively brief texts were combined with a multitude of page-size miniatures to make up a veritable picture book of astrology.²⁸ The intention was quite obviously to develop images of the relevant heavenly bodies which correspond to the new knowledge of Arabic astrology, and at the same time to give a vivid idea of these entities, so necessary for the functioning of the world. In order to show the special power of the planets, these were shown in the guise of portraits of medieval rulers in kingly garb. A few handheld objects or attributes draw attention to their particular area of influence. Thus Venus holds a psalter and a chalice; Mercury a book; Mars a sword; Saturn refers to a vine branch (Figs. 10.10, 10.11). Since the power of the planets depends on their place in the zodiac and is not constant, the painter shows four different pictures of the enthroned planets. In its house the planet sits in a royal pose upon its throne (Fig. 10.6). The next miniature shows the wavering of its power in the so-called Opposite House (Fig. 10.7), and one sees the planet sliding sideways from its throne. In the following picture the Exaltation places the planet once again on its throne, where it shows its attributes (Fig. 10.8). In the concluding picture, the planet in fall goes headlong into the void (Fig. 10.9). The powerlessness of each planet in a particular point of the zodiac is thus forcefully demonstrated. In this series of images the planets are

²⁷ Blume 2000 (as in n. 6), pp. 47ff.

²⁸ Paris, Bibliothèque Nationale Ms. Lat. 7330, see Blume 2000 (as in n. 6), pp. 34ff as well as Dieter Blume, "Michael Scot, Giotto and the Construction of new Images of the Planets," in *The Images of the Gods, Papers of a Conference in Memory of Jean Seznec*, ed. Rembrandt Duits and François Quiviger, Warburg Institute Colloquia 14 (London: 2009), pp. 129–150.



Fig. 10.6: Paris, bibl. Nat. Ms. lat. 7330, Fol. 42v, Saturn in his houses



Fig. 10.7: Paris, bibl. Nat. Ms. lat. 7330, Fol. 43r, Saturn in his anti-houses

the astrological rulers of the heavens and are shown in all their operations and circumstances. Apparently this ambitious picture cycle was invented in the inner circle close to the imperial court, or indeed, perhaps it originated in a personal initiative of Frederick II.



Fig. 10.8: Paris, bibl. Nat. Ms. lat. 7330, Fol. 43v, Saturn in his *exaltatio*

Michael Scot and the Importance of Images

Slightly later Frederick II's court produced another description of the heavens, which would enjoy enormous success in the following century. Michael Scotus was active as a scholar at court from around 1220 to his death in 1236. He composed a complete guide to science at the time,



Fig. 10.9: Paris, bibl. Nat. Ms. lat. 7330, Fol. 44r. Saturn in his *deiectio*

which was dominated by astrology. The title *Liber introductorius* indicates unmistakably the propaedeutic character of the work; and in the Foreword the writer clarifies that he purposely wrote in a simplified idiom in order for non-specialists to profit.²⁹ A portion of this work is a thorough description of the heavens, with all the constellations and planets, and

²⁹ Blume 2000 (as in n. 6), pp. 52ff and Blume 2009 (as in n. 28), pp. 131ff. Silke Ackermann, *Sternstunden am Kaiserhof: Michael Scotus und sein Buch von den Bildern und Zeichen des Himmels* (Frankfurt/Main: 2009).



Fig. 10.10: Paris, bibl. Nat. Ms. lat. 7330, Fol. 54v, Venus in his *exaltatio*



Fig. 10.11: Paris, bibl. Nat. Ms. lat. 7330, Fol. 56r, Mercury in his houses

for the first time, Michael Scotus gives also a brief characterization of the astrological influence of each constellation. In his chapter on the planets he goes through a very detailed description of the appearance and dress of each wandering star, and adds afterwards a detailed account of the astrological significance of all these elements. This description of the heavens

was copied separately in the later years of the 13th century and enjoyed a wide distribution in Italy and Northern Europe. Michael Scotus utilized a wide range of sources, and his intention was obviously to provide a synthesis of various occasionally contradictory traditions. His starting point was however an elaborate series of miniatures, which had been conceived in the abbey of Monte Cassino in the first half of the 11th century, and which Scotus perhaps took to be ancient or else at least to be a true copy from an ancient source. There is a 12th century copy of these miniatures in Madrid, which may very well be the manuscript Scotus himself used.³⁰ Here he found pictures, for instance, of the Milky Way or of the southern celestial pole, not to be seen anywhere else. He also used the star catalogue known as *De signis coeli*, widely diffused in the Middle Ages, as well as Ptolemy's *Almagest*, in Gerhard of Cremona's Latin translation. From Ptolemy he drew the total number, forty-eight, of the constellations, to which he often referred. Since the Madrid manuscript of Germanicus only described forty-two, he sought alternative pictures for the missing ones in order to have a complete series, in word and image. He placed these six extra constellations mainly in the Southern Hemisphere. In Ptolemy he found also the indication "Falling Eagle," (*vultur cadens*), as an alternative name for the constellation Lyra. This "falling eagle" put him in mind of the constellation "Eagle" (*vultur volans*); and he sought an appropriate image in the available sources. In the Germanicus manuscript (now in Madrid) he found the miniature of Jupiter carried through the air by the eagle, which illustrates the invocation of Jupiter in the preamble. Since the eagle dominates this picture, he interprets this as the missing depiction of the constellation *vultur cadens*. His description of this constellation is in fact clearly based on this picture (Fig. 10.12). He obviously started from the existing picture and sought some text information to connect with it. He did the same thing with the pictures of the Milky Way, which he described as *demon meridianus*, or with the southern celestial pole (Astronothus). Both images he placed as constellations in the southern sky.

Scotus considered the details in the pictures to be important sources of information, as we see by his rendering and description of Cassiopeia. In the Madrid miniature an undulating red line falls down from the right hand of the enthroned lady. Since Cassiopeia in the Latin translation of

³⁰ Madrid, Biblioteca nacional, Cod. 19, on which Mechthild Haffner, *Ein antiker Sternbilderzyklus und seine Tradierung in Handschriften vom frühen Mittelalter bis zum Humanismus, Untersuchungen zu den Illustrationen der "Aratea" des Germanicus* (Hildesheim: 1997), pp. 91ff. Blume, Haffner, Metzger (as in n. 19).



Fig. 10.12: Madrid, Bibl. Nac. Cod. 19, fol.55r, Jupiter astride the eagle

Ptolemy is described as a figure with a wet or painted hand, and Scotus interprets this painted line as a flow of blood going out from the hand. The astrological explication of the constellation is based on this detail, since all those born under Cassiopeia will die a violent death.³¹ In many cases the astrological significance of the constellations is inspired immediately by elements of the picture, and this is obviously the reason why the pictures have such an importance for Scotus. So he writes that no detail of the paintings is without astrological relevance, and that the astrologer must pay close attention to all particulars, since all these images existed in the fixed stars. But he is not interested in the ancient myths connected

³¹ Ackermann 2009 (as in n. 28), pp. 186. Compare Blume 2009 (as in n. 28), pp. 132f.

with the constellations, described amongst others by Hyginus, since, as he says, they have no significance for the astrologer.

Also in describing the planets, whose roles are so central to astrology, Scotus starts with a miniature in the Madrid Germanicus manuscript (fol. 68r). This illustration shows the busts of the five planets (Figs. 10.13, 10.14), distinguished by their clothing, but the usual ancient attributes are missing. Venus, the only woman, is prominently placed in the middle of the group. Mars is easily recognized as a warrior. Mercury bears a lance-like rod and a cloak knotted at the side and can thus be taken for a weapon-bearing figure. Jupiter has a round golden object in his hand and Saturn has his cloak pulled up above his head. The medieval painter thus gives the ancient *pallium* a hood-like extension, which recalls a monk's hood. Clearly this was Scotus' thought when describing Mercury as a cleric wearing the

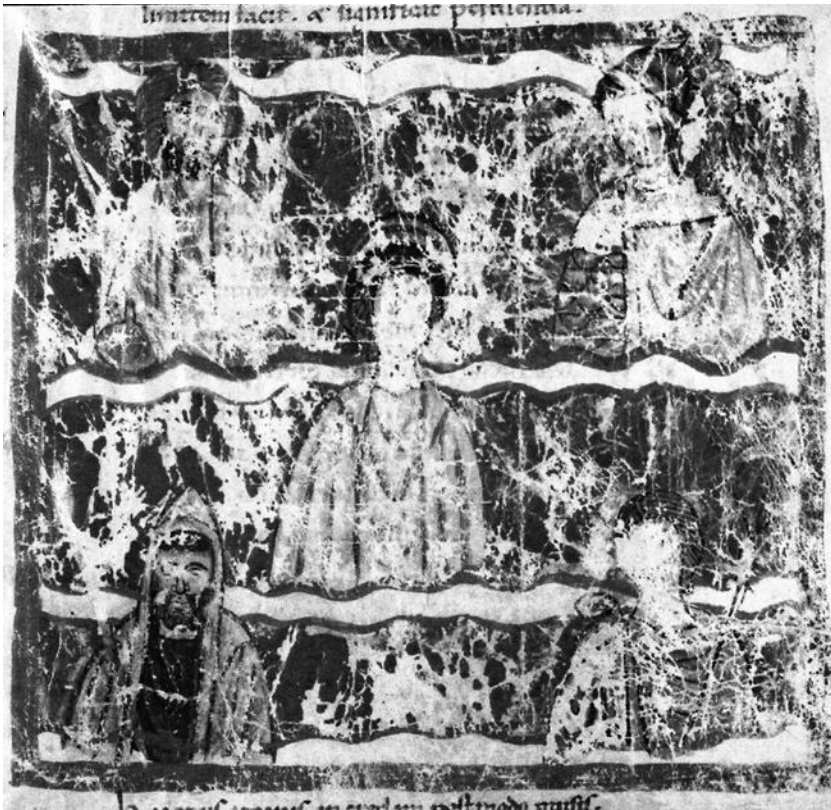


Fig. 10.13: Madrid, Bibl. Nac. Cod. 19, fol. 68r, The five planets

costume of a bishop or abbot. Obviously he had no interest in the ancient iconography of the planet-gods: he is only interested in the astrological influence of the heavenly bodies. To explain the particular influences of each, he draws upon the astrological handbooks, such as the one by Abū Maʿšār. Also the appearance of the planets conveys this information in his description of the heavens, even to the tiniest detail of the clothing.

Furthermore he attempts to find connections with the experience of his readers in order to emphasize the vividness of these astrological powers. He describes Mercury as a scholar sitting in a university chair with a book. Mercury becomes a university scholar, portrayed according to the tradition of portraits of professors. This way the aspect of scholarship, which is the realm for which this planet is responsible, is unmistakeably clear, since this motif is already well known to the reader and beholder. Since the intellectuals of this time, including Scotus himself, were mainly clerics, he also gives Mercury the attributes of a bishop or an abbot.³² He does similarly with Venus, described as a crowned noblewoman in luxurious raiment smelling a rose. The smelling of the rose, he explained, signified erotic joy, the stylish headdress denoted love, and the elegant raiment the art of seduction. Scotus's notion also here comes from an already established picture type, which he merely transfers to the figure of the planet, since springtime is often represented exactly in this way. This also seems astrologically plausible, because Spring is always connected with love, and Venus has Taurus among its houses. Once again Scotus utilizes a familiar picture type to reveal clearly his intention. Mars bears a variety of very modern armaments. His helmet appears with neck and chin protectors and a decorative crown. He wears a chest protector and greaves. Such armour, which would have passed for complete at the time, defined the planet as a notable lordly warrior. He is armed by way of shield and lance as well as a crossbow, one of the period's more modern and widely feared weapons. Scotus here refers to contemporary military technology rather than to ancient traditions. In the image of Jupiter he combines the appearance of a judge, an important bourgeois and a bishop. He wears a fur-lined garment, gloves, jewelled rings and from his belt hangs a money-pouch. In his hand he holds a flower or the baton of an office-holder. On his head he wears a biretta or a bishop's mitre. The golden ball which the Jupiter of the Madrid Germanicus miniature holds in his hand is probably

³² See the descriptions of the planets in Ackermann 2009 (as in n. 28), pp. 256ff. Compare Blume 2000 (as in n. 6), S. 55ff and Blume 2009 (as in n. 28), pp. 135f.

responsible for this rich association with wealth. Saturn finally appears in the clothing of a simple farmer, in dark colours. In his hand he holds a sickle or scythe. Scotus also puts a shield and buckler in his hands as armaments in order to remind about the constantly negative influence of this planet. In this full description of the single planets Scotus pays attention to the particular differentiation in clothing and attitude. Each of the single figures represents a specific social group, so that more or less each class here has its own corresponding astrological picture. Saturn is the farmer, but as a farmer, also a wartime wanderer; Jupiter seems like a respectable city patrician, the worthy office-holder in the city and Church hierarchy; Mars is a knight or a mercenary soldier; Venus on the one hand is described as a beautiful noble woman, representing at the same time virtue and love and sexuality. Mercury on the other hand is a scholar and, like most intellectuals of the time, a cleric. All these characterizations are in accordance with the experience of the readers, who by the clues presented here may immediately gain a concrete idea of the planets. This way astrology would be all the more deeply anchored in the thinking of the time, and this must have been the intention of Scotus. At least by this point in time the connection to the ancient gods with their traditional attributes must be considered to have been interrupted. Nobody would associate these planetary figures, expressing the current state of astrological knowledge, with the classical ancient gods.

Astrology in the Italian City-States

Michael Scotus obviously planned his text from the beginning to be accompanied by illustrations; and perhaps also an original illustrated manuscript existed. In any case his work did not immediately enjoy a greater diffusion; from the 13th century survives no more than a single manuscript. However, in the last quarter of the 13th century the astrologer Bartholomaeus of Parma in Northern Italy must have known it, since he utilized portions of the text in his own writings.³³ By the beginning of the 14th century, at least the description of the planets and the constellations were known in Northern Italy. This description of the heavens was also often separately copied and became diffused north of the Alps (*Liber de*

³³ Ackermann 2009 (as in n. 28), pp. 93ff and Silke Ackermann, "Bartholomew of Parma, Michael Scot and the Set of New Constellations in Bartholomew's *Breviloquium de fructis tocus astronomie*," in *Seventh Centenary of the Teaching of Astronomy in Bologna 1297–1997*, ed. P. Battistini (Bologna: 2001), pp. 77–98.

signis et imaginibus celi). Around 1310 the text must have been available in Padua to the famous astrologer Pietro d'Abano and to the no less famous painter Giotto. Both of them at that time planned the painting of the great hall of the communal palace in Padua (Palazzo della Ragione) (Fig. 10.15). Unfortunately these once-famous frescoes have come down to us only in ruins. After a disastrous fire they were repainted and restored in the first half of the 15th century. One heavy storm in the 18th century wrought more damage, leading to a further repainting. However various copies from the 14th century give us at least an idea about how the planetary figures must have looked.³⁴

The concept of the decoration follows the times of year and shows the works of the months with the zodiacal signs. The planets may be seen in their houses, and thus in the zodiac signs where they have the greatest power. Then each planet appears twice, with the exception of the sun and moon. These repetitions are used in order to depict very different aspects of the respective planets (Fig. 10.16). Giotto uses the descriptions from

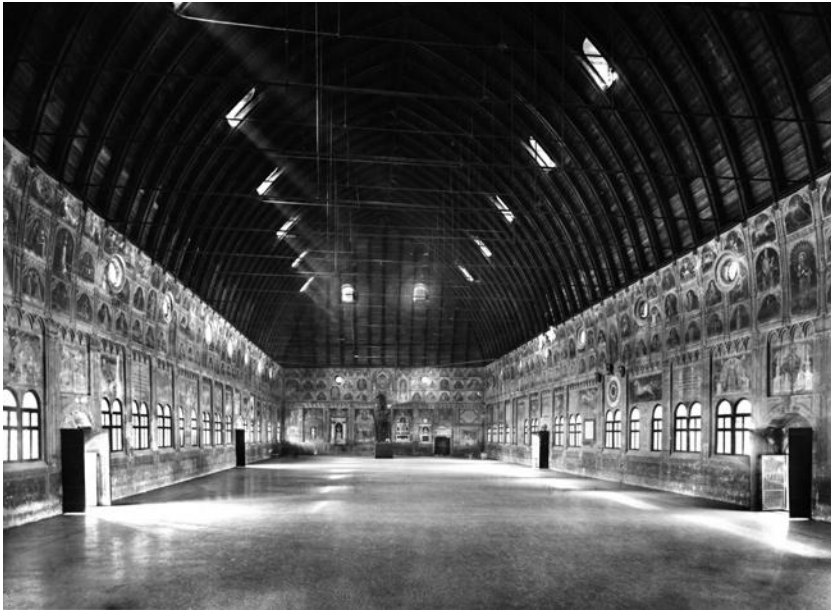


Fig. 10.15: Padua, Palazzo della Ragione, The Great Hall

³⁴ Blume 2000 (as in n. 6), S. 70ff and Blume 2009 (as in n. 28), pp. 137f.



Fig. 10.16: Padua, Palazzo della Ragione, Mercury in the sign of Virgo

Michael Scotus in order to create nearly theatrical images which show the planets at the various activities in front of a dark blue night sky. Moments of action enrich the painting, and a great golden star on the backs of the figures indicates them as heavenly bodies. We see Mercury at a scholar's writing table, handling an armillary sphere. Venus, in a fresco by Guariento, that follows the model of Giotto, looks in a mirror, the standard attribute of *luxuria* (Fig. 10.20).³⁵ The red flames of love are burning around her feet. Giotto had used the same motif shortly before in the Arena Chapel, to depict the all-consuming passion of envy and jealousy in his painting of the sin of *invidia*. Venus raises her dress in a very suggestive gesture, exposing her legs. The second picture of Venus shows the planet apparently bare, as seen in a miniature of the early 15th century.³⁶ Mars is seen as a mounted warrior, drawing his sword at full gallop. The best notion of the original image comes from an unfinished drawing in a manuscript in Chantilly (Fig. 10.17).³⁷ In the second picture the armed Mars sits on a throne and holds a tower in his hand, the recognized attribute of courage and strength. And so Giotto, just as did Scotus in his descriptions, is using well-known attributes of familiar allegories to characterize the planets. Jupiter appears in the guise of an enthroned emperor with sceptre and sphere (Fig. 10.18). Saturn on the other hand is a farmer on the way to his fields, the scythe on his shoulder, and carrying a water flask (Fig. 10.19). A miniature in the Chantilly manuscript gives a precise idea of the original painting. The second Saturn picture was probably similar to a fresco by Guariento, showing a melancholy old man leaning on his axe.

Giotto and Pietro d'Abano obviously started with the descriptions of Michael Scotus and took the basic characterizations as well as the division in basic social types. They apparently tried to show the planets in action and to demonstrate their sphere of influence in a more impressive way. These paintings fast achieved fame and dominated astrological imagery in Italy throughout the 14th century. All later depictions of the planets are in one way or another influenced by these. With this monumental pictorial decoration in a very prominent, official building, a new visual tradition was established, which would impress viewers long afterwards. In the painted decorations of the representative buildings in the Italian city-states the astrological cycle of the planets played from this time on a

³⁵ On Guariento's frescoes in the apse of the church of the Ermitani in Padua, see Blume 2000 (as in n. 6), pp. 95ff.

³⁶ Modena, Biblioteca Estense, Ms. Lat. 697, f. 6r, see Blume 2000 (as in n. 6), S. 79.

³⁷ Chantilly, Musée Condé, Ms. 754, f. 2v, see Blume 2000 (as in n. 6), S. 80f, 106, 206f.

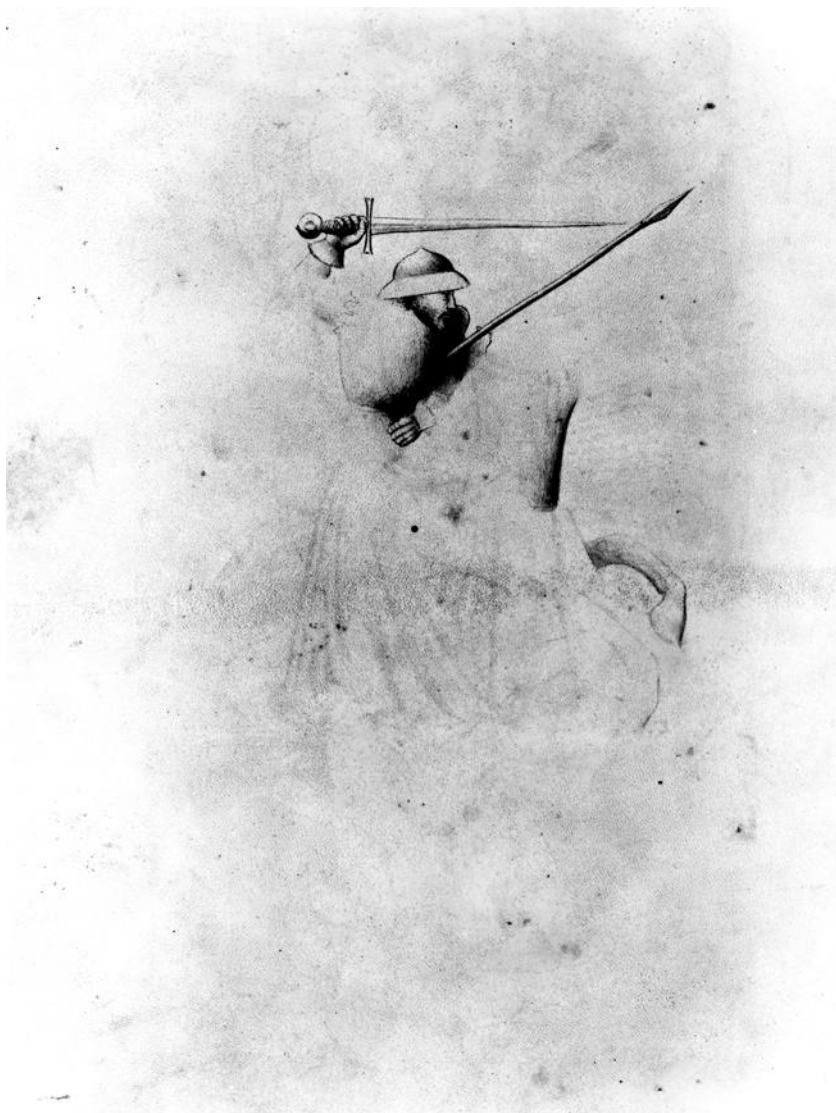


Fig. 10.17: Chantilly, Musée Condé, Ms. 754, Fol. 2v, Mars

constant and often prominent role. They can be found in the relief cycle of the Florentine bell tower produced in the workshop of Andrea Pisano between 1324 and 1341, and also in the framing of the famous paintings in the Sala dei Nove in the Palazzo Pubblico of Siena, completed by Ambrogio Lorenzetti between 1337–40. Likewise the capitals in the loggia of



Fig. 10.18: Chantilly, Musée Condé, Ms. 754, Fol. 2r, Jupiter



Fig. 10.19: Chantilly, Musée Condé, Ms. 754, Fol. iv, Saturn

the ground floor of the Doge's Palace in Venice, built around 1341–1355, present an encyclopaedic program, and on the corner capital, i.e., in a key position, we find the planets with their Houses. For Giovanni Villani (1276–1348), who wrote a comprehensive chronicle of his home city of Florence, astrology offers a logical explanation to the numerous vicissitudes of history. He saw in the changing position of the planets the natural cause of many historical events.³⁸

For the first time in the cultural environment of the Italian city states, astrological images extended beyond their origins within the restricted precincts of luxurious courtly manuscripts. In these communal programs the planets point to a cosmic pattern, within which alone the political life of the states must be able to play out.

Critical Positions

In the 14th century critical voices also ranged against astrology; the most prominent doubtlessly being Francesco Petrarca, who often stayed in Padua from 1349 and before finally moved there in 1368. He maintained strong contacts with the convent of the Augustine hermits who ran an ambitious school program in their Paduan cloister and in 1364 took part in the foundation of a Theological Faculty in the predominantly medicine-oriented University of the city. When the Paduan painter Guariento undertook the painting of the great chancel of their convent church around 1360, the Augustine hermits cited the astrological painting cycle of the Palazzo della Ragione.³⁹ In so doing they integrated astrology within a theological framework, at the same time placing strict limits for the science of the stars. Guariento's frescoes provide a programmatic alternative to the more comprehensive version in the Palazzo della Ragione.

In the pedestal zone, at eye-level, closest to the high altar, we see the planets with the exact same iconography as in Giotto's frescoes fifty years before (Fig. 10.20). By their sides stand representations of the seven ages of man. Thus the point is made that the influence of the planets fundamentally holds in regard only the decrepitude of earthly life. Inserted into the cycle in the middle sections of the polygon of the chancel are pictures of the Resurrection and Passion of Christ (Fig. 10.21), grouped around

³⁸ Blume 2000 (as in n. 6), pp. 85ff. For Villani compare also L. Green, *Chronicle into History, an Essay on the Interpretation of History in Florentine Fourteenth-Century Chronicles* (Cambridge: 1972).

³⁹ Blume 2000 (as in n. 6), pp. 95ff.

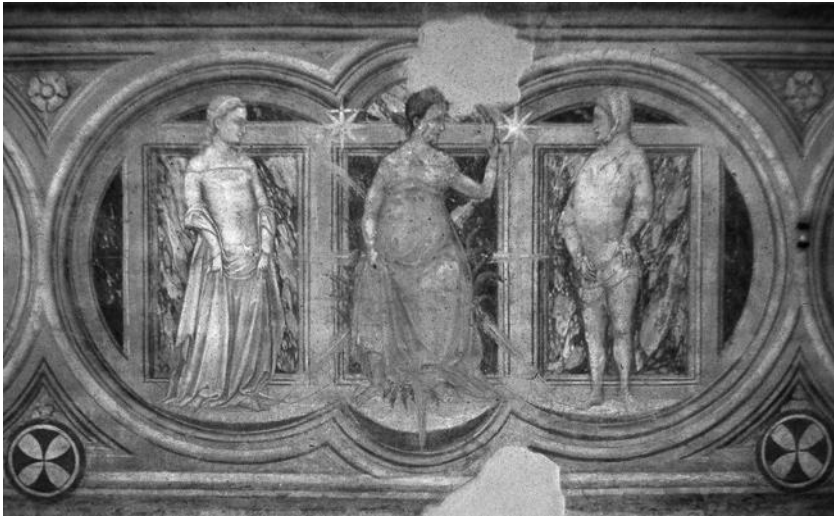


Fig. 10.20: Padua, Chiesa degli Eremitani, main chapel, Venus

a depiction of the Man of Sorrows. Thus following Christ appears to be the only way out of the bleak cycle of earthly existence. These paintings are done in monochrome and are therefore clearly set off from the paintings in the upper zones. The earthly is just a pale reflection of the godly; it is allowed only the slightest degree of reality.

Above the planets there is depicted the life of St Augustine, the founder, along with the history of the Order. On top of this are the martyrdoms of the apostles Philip and James, the title saints of this church. In the upper spandrels of the side walls there was still place for the four evangelists, and in the vault, before being destroyed in World War II, there was Christ among the Heavenly Host in the context of the Last Judgment. The spatial organization of the pictures evidently expresses the idea of a systematic, hierarchically ordered world. Astrology has, in the view of the Augustinian hermits, only a humble role, since the planets can only influence the vicissitudes of earthly existence, which, before God, are merely irrelevant. The hermits here offer a clear alternative to the astrological world-view of Pietro d'Abano. The debate in which these two Paduan fresco cycles of the 14th century participate was never really concluded, and indeed, until the present time has basically not lost its relevance, even though the arguments have changed.⁴⁰

⁴⁰ Compare Eugenio Garin, *Lo zodiaco della vita, La polemica sull'astrologia dal Trecento al Cinquecento* (Bari: 1976).



Fig. 10.21: Padua, Chiesa degli Eremitani, main chapel, Rising Christ

The Humanistic Approach

Another key text in the history of astrological artwork comes from the pen of Giovanni Boccaccio (1313–1375). From around 1350 he worked on a fundamental treatise on ancient mythology which enjoyed wide

dissemination under the title of *Genealogie Deorum Gentilium*, from the end of the 14th century. This book was for over a hundred years the basic reference for classical mythology. Boccaccio not only simply described the myths, he also offered a logical interpretation of the events transmitted in the tradition, and of the attributes characterizing each figure. Astrology thus gave him a rational grounding for the characters of the central deities, by way of their associated planets. Abū Maʿšar, along with the astrologer Andalo di Negro was among his most-cited authors. Again and again he emphasizes that the comments of the ancient poets agree perfectly with the statements of the astrologers. He understood the ancient myths as poetical descriptions of astrological constellations, and so the ancient poetry and the pagan myths played a role which is in complete accordance with the late medieval understanding of the world. The defence of the ancient poets against critics was a major objective of Giovanni Boccaccio, an objective which particularly occupied him in the last book of his comprehensive work.⁴¹

Since Boccaccio assembled many details and even subjected the ancient attributes to a close astrological interpretation, it seemed reasonable to make the image of the planets fit with the appearance of these ancient gods. Thus by a gradual process during the course of the 15th century the astrological powers regained their ancient guise. They lost, however, the great clarity they had possessed in Michael Scotus and in the 14th century paintings, where the particular area of their influence was indicated even in their outward appearance.

The connection between astrology and humanistic knowledge about the ancient world we find already around 1410 in the paintings of the Palazzo Trinci in Foligno.⁴² The Signore Ugolino Trinci here had an ambitious iconographic program carried out that was largely based on ancient models. The accompanying inscriptions were composed by the Roman humanist Francesco da Fiano, who also worked for the court at Foligno. In one room, which probably served as a library or a study, the walls are decorated with depictions of the seven liberal arts and the planets. The observer here becomes a kind of witness to a race between the planets over a cloud surface in front of the dark blue night sky. The astrological

⁴¹ Blume 2000 (as in n. 6), pp. 112ff. Edition with Italian translations by Vittorio Zaccaria, *Tutte le opere di Giovanni Boccaccio*, ed. V. Branca, vols. VII–VIII (Milan: 1998).

⁴² Blume 2000 (as in n. 6), pp. 118ff. *Il Palazzo Trinci di Foligno*, ed. Giordana Benazzi and Francesco Federico Mancini (Perugia: 2001). *Nuovi studi sulla pittura tardogotica: Palazzo Trinci*, ed. Antonino Caleca and Bruno Toscano (Foligno: 2009).

powers in their heavenly dwelling place are displayed before the eye, with cosmological naturalism. The natural appearance of the heavenly bodies influences the artistic approach in many respects. Thus Luna is bathed in the same pale white light as the Moon in real life (Fig. 10.22). The crescent moon appears like a halo behind her head. She whips the galloping horse to greater haste, so that the speed with which the moon completes its cycle is represented in the fresco. The sun is a glowing red image in



Fig. 10.22: Foligno, Palazzo Trinci, Sala dei Pianeti, Luna

a four-horse carriage; she holds a golden disc which shoots out golden rays. Mars is clothed in a reddish garment and a red pennant flutters from his lance (Fig. 10.23). It is in this way that the planet's reddish light is characterized.

But for the first time there are also some ancient elements. Mercury runs along, with pairs of wings attached to his boots (Fig. 10.24). A head-band with the ends streaming behind completes the ancient aspect. With



Fig. 10.23: Foligno, Palazzo Trinci, Sala dei Pianeti, Mars



Fig. 10.24: Foligno, Palazzo Trinci, Sala dei Pianeti, Mercury

his right hand extended he holds a sheet of paper, identifying him as the messenger of the gods. Jupiter in his raised right hand holds a bundle of three arrows, so he is returned to the role of thunderbolt-wielding lord of the gods (Fig. 10.25). The image of Venus is unfortunately lost. Saturn is portrayed with a dark hooded garment, holding a sickle and bearing what is probably a scythe over his shoulder. He moves only with tiny paces and so this picture is exemplifying the long duration of its cycle and also the



Fig. 10.25: Foligno, Palazzo Trinci, Sala dei Pianeti, Jupiter

weak light coming from the planet. Beside the single planets are placed medallion paintings showing the seven ages of man in parallel to the canonical hours. Thus is emphasized the relevance of astrological influence for day-to-day matters and for the course of human life.

The planet depictions done in Rimini a few years later in the sepulchral church of Sigismondo Malatesta, the so-called Tempio Malatestiano, present yet another context. Chapels were built alongside the single nave

of the Franciscan church, and the arches were decorated from 1453 with figurative reliefs by Agostino di Duccio. These reliefs show the Virtues, the Sibyls and Prophets, the liberal arts and the muses, as well as the planet gods. The planets are presented in their cosmological order and stand between the signs of the zodiac where they have their Houses. The placement of the astrological deities within the space of a church is exceptional, and the appearance and attributes of the single images is anomalous. The influence of the learned compilation by Giovanni Boccaccio is manifest here, since the iconography is in its finest details oriented to the ancient gods. Myth and astrology are here strongly connected. Almost all the necessary information and explication comes from the *Genealogie Deorum Gentilium* of Boccaccio. But of course, the court humanist Basinio da Parma (1425–1457), who conceived the program, utilized other literary texts from Antiquity as well in order to increase the intellectual content of the program and stimulate the learned viewer.⁴³

Mercury for instance is a gigantic figure, whose knees are enveloped in clouds (Fig. 10.26). He holds a long staff extending down to the ground, wound round with two double-headed snakes. The lower end of this staff is planted between his feet in a circular cavity in the ground, wherein small spirits are cavorting. Some of them are scrambling up the staff, others are sliding down. These, as Boccaccio describes in detail, drawing on Virgil, are obviously souls, which Mercury, with his staff, leads down into the Underworld or guides up again. Agostino di Duccio has taken up these happenings in a very small format like attributes in his relief sculptures; he interprets the staff as a kind of climbing stick, with whose help the souls manage to overcome the steep walls of Orcus at the entrance to the Underworld. The planet god himself is conspicuously absent and uninvolved in these events. The snake-wound staff is, as well as the winged shoes, the lyre which he holds in his left hand, and the rooster by his feet, are explained in the *Genealogie*. The hat of the planet god is also interpreted by Boccaccio, but the high pointed, conical form in the image given by Agostino di Duccio is very unusual. The hat of the third Mercury, operating in Egypt, symbolizes (according

⁴³ Blume 2000 (as in n. 6), pp. 139ff. Stanko Kokole, *Agostino di Duccio in the Tempio Malatestiano 1449–1457: Challenges of Poetic Invention and Fantasies of Personal Style*, Diss. John Hopkins University (Baltimore: 1998). Stanko Kokole, "Cognitio Formarum and Agostino di Duccio's Reliefs for the Chapel of the Planets in the Tempio Malatestiano," in *Quattrocento Adriatico, Fifteenth-century Art of the Adriatic Rim, Papers from a colloquium held at the Villa Spelman, Florence 1994*, ed. Charles Dempsey (Florence: 1996), pp. 177ff.



Fig. 10.26: Rimini, Tempio Malatestiano, Mercury

to Boccaccio) the heaven which covers us all. The stripe-like decoration, which adorns the tall headgear in the relief, can in fact be seen to recall the heavenly spheres. At the same time this hat gives its bearer a foreign appearance, referring perhaps, one might think, to the god's Egyptian background.

Knowledge of Boccaccio's text is clear also from the rendition of Venus, since the goddess drives a carriage drawn by swans, as described in the *Genealogie* (Fig. 10.27). The sea shell she holds in her hand and the doves that drop down from the heavens are listed there as sexual symbols. Saturn in this series is for the first time depicted as an old man who devours his own children (Fig. 10.28). He stands slightly bent over before the viewer; in his right hand he holds the sickle and in the left he has a tiny naked child who vainly attempts to free itself.

The intention of this demanding and exceptional church decoration is apparently to promote a strong connection between ancient philosophy and Christianity. In the joining of Christian theological forms of knowledge with ancient profane forms, perhaps the point was to demonstrate the continuous perfection of man and his possible way to a close relation with God. Basically in line with Boccaccio, who clarified the meaning of the ancient myths by turning to astrology, here the focus is on the so clearly demonstrated identity between planets and pagan gods, in order to achieve a higher truth with regard to the ancient traditions. The ancient myths have their place in a Christian worldview, inasmuch as they serve to indicate the astrological influence of the stars. In this connection the scholars and poets of Antiquity truly saw and indicated much, even when lacking the decisive frame of reference of the Christian understanding of God, which reduced the planets to subordinate entities.

The paintings of Palazzo Schifanoia in Ferrara around 1470, which we mentioned at the outset, are dedicated to the course of a year and to the relative stellar influence; but they supplant the planets, in spite of the astrological significance of these, in favour of the twelve ancient deities, assigned generally to the twelve months in the recently rediscovered didactic poem of Manilius. Thus gods and not planets are seen in triumph in the upper zone of the painting; and so the many-figured scenes are conceived in the details of mythography. Here too the focus is the ancient mythological tradition which is connected with modern astrology—just as in Rimini.



Fig. 10.27: Rimini, Tempio Malatestiano, Venus



Fig. 10.28: Rimini, Tempio Malatestiano, Saturn

The Painted Horoscope of Agostino Chigi

Clearly in tune with humanistic learning was also the painting of a garden loggia in Rome, completed a few decades later. The Sienese banker Agostino Chigi had a summer villa built across the Tiber between 1506 and 1510, of which the painting continued to around 1520. In one of the open loggias facing onto the garden of the ground floor Raphael in 1512 painted his famous fresco of the nymph Galatea. The vault was already painted by Baldassare Peruzzi in 1510–11, and shows in a humanistic and cryptic form, the birth horoscope of the patron.⁴⁴ In any case the architectural structure of the ceiling offered some challenges to the program. Fourteen lunettes are situated between the wall and the great ceiling panel (Fig. 10.29). Ancient decorative elements follow the architectural lines and subdivide the vault in numerous single compartments. In the centre of the main ceiling panel there was presumably the coat of arms of Agostino Chigi.⁴⁵ On one side we see Perseus decapitating Medusa, along with the allegory of Fame and, on the other side, the constellation of Ursa Major. Stars against a blue background surround the images and obviously indicate the night



Fig. 10.29: Rome, Villa Farnesina, Loggia del Galatea, ceiling

⁴⁴ Julian Kliemann, Michael Rohlmann, *Wandmalerei in Italien: Die Zeit der Hochrenaissance und des Manierismus 1510–1600* (München: 2004), pp. 194ff. *La Villa Farnesina a Roma*, ed. Christoph Luitpold Frommel (Modena: 2003). On the astrological meaning: Kristen Lippincott, "Two Astrological Ceilings Reconsidered: the Sala Galatea in the Villa Farnesina and the Sala del Mappamondo at Caprarola," *Journal of the Warburg and Courtauld Institutes* 53 (1990): 185–207. Mary Quinlan-McGrath, "The Astrological Vault in the Villa Farnesina, Agostino Chigi's Rising Sun," *Journal of the Warburg and Courtauld Institutes* 47 (1984): 91ff. Mary Quinlan-McGrath, "The Villa Farnesina, Time-Telling Conventions and Renaissance Astrological Practice," *Journal of the Warburg and Courtauld Institutes* 58 (1995): 52–71. Fritz Saxl, *La Fede astrologica di Agostino Chigi* (Rome: 1934).

⁴⁵ The present crest belongs to a later occupier of the villa. Chigi's crest shows a mountaintop over which a star is visible.

sky. So apart from Fame there are two prominent constellations and this should indicate that there were more constellations in the remaining picture fields. In the ten hexagonal, blue-coloured fields between the lunettes we can easily recognize the zodiac signs, though Scorpio and Libra as well as Aries and Taurus must be placed together in a single compartment. The zodiac signs however do not appear in the iconography that had been typical in the astronomical manuscripts since Carolingian times, but shown instead are the myths which had inspired the original formation of the constellations. The basic guide here is the text of Hyginus.⁴⁶ Thus for Cancer, Hercules' fight with the Hydra is depicted; and for Gemini, the coupling of Leda with the Swan (Fig. 10.30). For Aquarius we see the rape of



Fig. 10.30: Rome, Villa Farnesina, Loggia del Galatea, ceiling, detail, Gemini (Leda and the swan)

⁴⁶ Hyginus, *De Astronomia*, Edition with French translation by André Le Boeuffe (Paris: 1983).

Ganymede by Jupiter. Also the planet gods step into these pictures. They are completely assimilated into the appearance of the ancient gods and depart decisively from the earlier planet iconography discussed above. There are no features within the pictures indicating the astrological significance of these gods. Thus a great deal of mythological knowledge is necessary in order to draw the connection to the constellations and even further to the concrete horoscope. In the lunettes themselves there are further constellations, lying outside the zodiac. Here again are depicted the mythological events after the account by Hyginus.

Since Agostino Chigi's birthday is cited in the baptismal register in Siena as the 29th of November 1466, and there is also a birth hour registered, which however is not easy to interpret, the ascendant in the birth horoscope appears to lie in the sign of Taurus. Thus the prominent signs of Aquarius and Leo on the short sides of the Loggia represent the highest point of the horoscope (*Medium Coeli*) and respectively the lowest point (*Imum Coeli*). So the geographical orientation of the loggia corresponds to a certain degree with the coordinates of Chigi's horoscope. But none of which is easy to make out even for an experienced observer; so we must assume a conscious decipherment. In a typical humanistic manner we find here a deeper truth under the veil of the mythology, in this case the horoscope of the patron with its positive astrological components. The conspicuous exaltation of Perseus could have his reason in the fact that Perseus rises with Taurus, the ascendant of the horoscope, and perhaps here Agostino Chigi seemed to find his personal constellation.⁴⁷

As in the paintings of the Palazzo Schifanoia in Ferrara, this ceiling fresco also remained without succession. It is therefore a quite extraordinary special case that combines the highest expression of humanist learning with deep astrological knowledge. Thus here was an iconographic program conceived, which only initiates were able to understand entirely. It is also one of the very few examples, in which instead of astrological principles, a very concrete single horoscope is portrayed.

Children of Planets—a German Invention

More importantly, however, for the history of astrological imagery is a vernacular popularization of astrological knowledge, which belongs to

⁴⁷ Lippincott 1990 (as in n. 44), pp. 195. Problematical is above all the significance of the central ceiling panel with the prominent position of Perseus and Ursa major as well as the role of Fama, which surely is connected to the patron.

the 15th century. The scene now moves from the Italian courts northwards to the southern German cities, which in this time enjoyed great economic and cultural development. In a series of texts which belong to this environment around 1400 there circulated the notion of the planets' children. By this is meant persons who have a practically familiar connection to a particular planet, which rules their horoscope and determines their character. This consisted in perhaps one of the most successful and long-lasting popularizations of complex scientific theories, which had yet existed. For although all the planets were considered to have their role in a horoscope, nonetheless in this case one is singled out and defined as authoritative.⁴⁸

The concept emerges first in poetry. Around 1422 Oskar von Wolkenstein composed a song regarding the seven planets and their children. Here in rhythmic verses and popular-sounding phrases the basics of astrology were explained. A comparable song comes from Salzburg, certainly slightly older, belonging to the end of the 14th century.⁴⁹ These songs were intended for public performance with a musical accompaniment. They refer to the children of the single planets and give a short character profile of the persons under the influence of those planets. Similar notions can be found in German-speaking texts on astrology from the same period. Thus for example the treatise of Johann Wissbier from Gmünd begins with the words, "This of late has been said of nature and the properties of the seven planets and their children . . ." ⁵⁰ Thus a simple concept of astrological influences was established, that each individual stood under the influence of a particular planet, and this connection was described using a familiar concept of family genealogy.

The success of this idea was due to its diffusion in a new trendsetting medium: the woodcut. Around 1430 an ambitious publication was realized, in which image and poetry, in close relation, explained the seven planets and their children (Fig. 10.31). The origins in Basel are attested by the reproduction of the state crest in the depiction of the children of Venus

⁴⁸ Basically, Blume 2000 (as in n. 6), pp. 158ff. Dieter Blume, "Children of the Planets: the Popularization of Astrology in the 15th Century," in: *Il sole e la luna, Micrologus, Natura, Scienze e Società Medievali*, vol. 12 (Florence: 2004), pp. 549–563.

⁴⁹ *Die Lieder des Oswald von Wolkenstein*, ed. K.K. Klein (Tübingen: 1987), no. 22, pp. 73ff. The poem of the Salzburg monk is edited by W. Kersken, *Gegner beschneid, die Kalendergedichte und der Neumondkalender des Oswald von Wolkenstein* (Göppingen: 1975), pp. 258f.

⁵⁰ Edition by V. Stegemann, *Aus einen mittelalterlichen, deutschen, astronomisch-astrologischen Lehrbüchlein* (Reichenberg 1944). Compare also F.B. Brévar, "The German Volkskalender of the 15th Century," *Speculum* 63 (1988): 312ff.



Fig. 10.31: Schweinfurt, Bibl. Otto Schäfer, Woodcuts from Basel, Venus

(Fig. 10.32).⁵¹ The verses and images are cut from the same wood block and on each page there are the verses above and the image below. For each planet there are two pictures and two stanzas of the poem. In the verses

⁵¹ A complete series of the woodcuts is in Schweinfurt, Bibliothek Otto Schäfer, Signatur OS 1033. Blume 2000 (as in n. 6), pp. 160ff, edition of texts pp. 230ff.



Fig. 10.32: Schweinfurt, Bibl. Otto Schäfer, Woodcuts from Basel, children of Venus

the planet speaks directly to the reader and viewer, as in a performance of a dramatic piece. First he gives astrological information concerning his particular houses and his orbit. In the picture we see the planet within a circular medallion moving along over a band of clouds. The nudity of the depiction, relating to ancient iconography, distinguishes the figure unmistakably as a higher being. In the second stanza the characteristics and activities of the planet's children are enumerated. The accompanying

image shows all of them gathered, each busy at their special occupation. The planet's children stand crowded on the vegetation-covered ground of earth, while their planet moves along as a single, lonely figure above the clouds. Both pictures aim systematically to contrast and to complement in their vividness the simple German verses. An intellectually planned conception of the woodcuts is recognizable which is based on the particular effect of the pictures. The initiators of this graphic series have developed an entirely new iconographic type, with which they successfully manage to popularize complicated astrological knowledge.

The appearance of the planet gods is without any direct predecessor. For the first time they come completely naked; a star over their pubic area indicates their status as heavenly powers. Only a few attributes follow the medieval iconography which is mainly based on Michael Scotus: the corona on the sun, the pilgrim's staff and scholar's hat of Jupiter, or the flower of Venus. Most attributes come from the ancient tradition, although the moon's horn of plenty and Mercury's money purse are rather rare even in the mythographical tradition (Fig. 10.33). All these elements are present in the planet images of the so-called Calendar of 354, also known as the Calendar of Filocalus.⁵² This splendid late antique manuscript, of which only copies from the 17th century survive, must have been kept in southern Germany in those times, and was likely known to the maker of the woodcuts. We are dealing here with a deliberate self-conscious assimilation of Antiquity. In the woodcuts the pictures of the planets are simplified and systematized. The total nudity identifies them as higher entities and the stepping forwards emphasizes their movement. The figures are differentiated by their attributes, which serve them as accessories, and among which can be found also contemporary elements. For planets' children the engraver has sought to give a rendition of the spatial context, and he often outlines the entire area of action of the figures. Thus for the children of Venus he gives a scene in a bath house and for those of Mars, a war and plundering. Among Mercury's children we find scholars and artists (Fig. 10.34). There we see a painter, a writer, a sculptor, a goldsmith and a musician.

Basic for the effect of these pictures is the close connection with the accompanying verses. Through the new medium of the woodcut, these images were from the outset intended for a wide diffusion. No wonder

⁵² Henri Stern, *Le Calendrier de 354, Étude sur son texte et ses illustrations* (Paris: 1953).



Fig. 10.33: Schweinfurt, Bibl. Otto Schäfer, Woodcuts from Basel, Mercury

that within a few years the images and poetry in this woodcut were copied in numerous manuscripts. Above all they are found in the so-called *Hausbuch*, a kind of almanac, which included, along with calendar and astrological information, as well as medical suggestions, usually structured throughout the course of the year. Such publications were widely diffused in southern Germany and in many cases included illustrations.



Fig. 10.34: Schweinfurt, Bibl. Otto Schäfer, Woodcuts from Basel, children of Mercury

Miniatures reproducing the Basel woodcuts are almost always there, along with depictions of the months, signs of the zodiac, and images for blood-letting points on the body.⁵³

A good example is a manuscript now in Berlin that was made in Mainz around 1445.⁵⁴ In the extensive astrological part the woodcuts are reproduced on double pages. Numerous simplifications indicate the dependence of the miniatures upon the woodcuts. An artist who worked at a very high artistic level illustrated just such a *Hausbuch* for Konrad Roener in Passau in 1445.⁵⁵ The images of the planets and their children are here joined together in a great circular scheme, which also shows the connection between the planets and the single hours of the day. The planets' children move in a panoramic landscape, over which the planet gods are seen

⁵³ Blume 2000 (as in n. 6), pp. 167ff. Brévar 1988 (as in n. 50), *passim*.

⁵⁴ Berlin, Staatsbibliothek, Ms. Germ fol. 244. *Katalog der deutschsprachigen illustrierten Handschriften des Mittelalters*, started by H. Frühmorgen-Voss, edited by Norbert H. Ott, vol. 1 (Munich: 1991), Nr. 11.4.5, pp. 375ff.

⁵⁵ Kassel, Gesamthochschul- und Landesbibliothek, 2° Ms. Astronom. 1. Ott 1991 (as in n. 54), Nr. 11.4.25, pp. 414ff.

in their own segments (Figs. 10.35, 10.36). Even though another picture concept is here at play, the single figures are all taken from the woodcuts and the verses are cited word for word.

Around 1475 an otherwise unknown master Joseph in Ulm created an elaborate handbook of astrology and fortune-telling, in which he included the usual *Hausbuch* calendar.⁵⁶ He got images from whatever sources he had available and integrated them in his manuscript. There we find various versions of planet images, zodiac signs and constellations. He also copied the woodcuts with the planets' children (Fig. 10.37) and expanded these with many-figured illustrations including numerous images from the urban context of the handicrafts and small businesses. He was also apparently influenced by a new version of the planets' children, dating



Fig. 10.35: Berlin, Staatsbibl. Ms. Germ. Fol. 244, Fol. 186v–187r, Mercury and his children

⁵⁶ Tübingen, Universitätsbibliothek, Ms. Md 2. Ott 1991 (as in n. 54), Nr. 11.4.43, pp. 400ff. Gerd Brinkhus, David Juste, Helga Lengenfelder, *Iatromathematisches Kalenderbuch, Codices illuminati medii aevi* 63 (Munich: 2005).

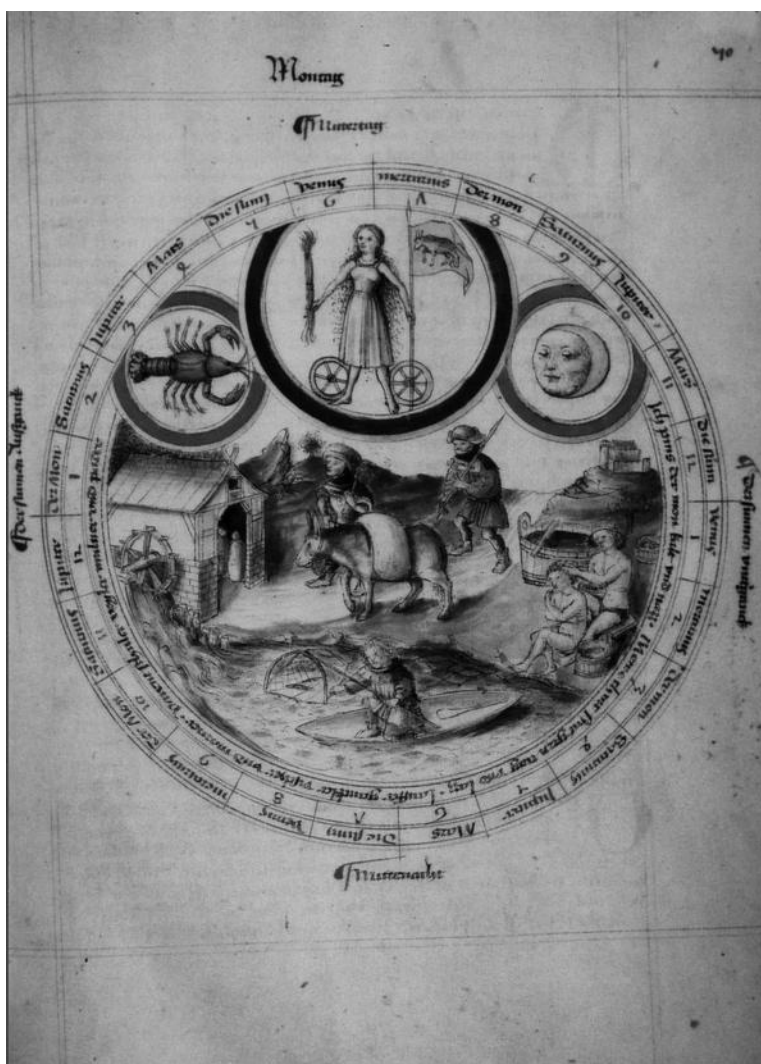


Fig. 10.36: Kassel, Landesbibl. Ms. Astronom 1 (2°), Fol. 64r, Luna and her children

from around 1470 in the Netherlands, which grouped the planets and the images of the children all on a single large-format page.⁵⁷

⁵⁷ Copenhagen, Statens Museum for Kunst, Kobberstiksamlng. H. Th. Musper, "Der Einblattholzschnitt und die Blockbücher des 15. Jahrhunderts," *Handbuch der Holz- und Metallschnitte des 15. Jahrhunderts* by W.L. Schreiber, vol. XI, (Stuttgart: 1976), pp. 55f.



Fig. 10.37: Tübingen, Univ.Bibl., Ms. M. d. 2, fol. 272r, Luna and her children

The list of copies and variants could easily be extended. Instead, we should emphasize the entirely new iconographic idea for depicting the planets, conceived in Basel around 1430, which soon became widely diffused through woodcuts. The close connection to the vernacular poetry, which perhaps was anyway composed with this use in mind, reveals the intentions of this remarkable publication. It attempted to extend basic astrological knowledge to a wider audience than would have been possible with scholarly Latin, and for whom the cost of large books would have been prohibitive. The interaction between pictorial representations and appealing verses showed everyone the special astrological influence of the planets, even when no other kind of knowledge was at hand. The numerous copies and reflections in other works testify to the great success of this invention, and demonstrate how well it corresponded to the interests of the urban population. This phenomenon is connected with the enormous intellectual and economic development of the south German cities in the late 15th century. The number of university graduates was increasing along with the production of books. Connected to this however is also a growing interest in paintings, which were now accessible in previously unknown numbers through the means of mechanical reproduction.

The Italian Version

The influence of these woodcuts extended well beyond this regional context. In the Italian courts there was also a fascination with the obvious appeal of this iconographic invention. Between 1450 and 1460 a richly illuminated manuscript was prepared for Francesco Sforza, duke of Milan, where the woodcuts were reproduced as magnificent miniatures.⁵⁸ Numerous details show the relation to the woodcuts. The artist has executed colourful landscape panoramas and placed the planets' children in new arrangements. He has also integrated specific elements from courtly life. Particularly prominent is this visual flourish in the case of Mars. Rather than robbing and plundering by soldiers we see well-ordered warfare by knights. In splendid armour, they ride out to besiege a city. In the end they fight hand-to-hand with equally powerful adversaries. The war is thus seen from the standpoint of the victorious condottiero, and not through the eyes of afflicted peasants or fearful city-dwellers. The accompanying

⁵⁸ Modena, Biblioteca Estense Ms. Lat. 209. Blume 2000 (as in n. 6), pp. 179ff. *The Painted Page, Italian Renaissance Book Illumination 1450–1550*, ed. J.J.G. Alexander (Munich: 1994), Nr. 18, pp. 75f.

verses abstain from any negative remark on war, and instead, include the name of the lord—Sforza—in the rhyming scheme. Thus the patron is praised as a son of Mars.

While this manuscript converted the German iconographical invention into an exclusive court art form, slightly later in Florence the Medici did the exact opposite. Around 1460 a series of copper engravings took up the same theme.⁵⁹ Here there was chosen a newly developed technique, in various ways superior to woodcuts and capable of larger editions. The planet and the landscape with the planets' children are all placed together in a single depiction, as in the previously mentioned later Netherlandish woodcuts. Although the activities of the planets' children still refer to those in the Basel woodcuts, they are regrouped and extensively developed. Above all, the artist has situated the whole into a clearly-indicated Florentine environment. The copper engravings are usually attributed to Baccio Baldini, about whom Vasari reports that he worked also on sketches from Botticelli. These graphics take us to a many-sided depiction of Florence and its inhabitants after the mid-15th century. Thus the viewers at the time would not only have seen a vivid illustration of astrological theories, but at the same time also a representation of their own urban culture appealing at once to their urban identity and their pride.

In the depiction of Mercury's children we find the architecture of Piazza della Signoria, the central place of the Florentine self-representation (Fig. 10.39). We recognize in the background the Loggia dei Lanzi and the church of San Pier Scheraggio. In the engraving with the children of Venus (Fig. 10.38) we find a depiction of a typical celebration before a villa in the environs of the city. But even the moon's children (Fig. 10.40) are depicted in a Florentine topography. We see Ponte alla Carraia and the widening Arno valley to the west of the city. This reference is particularly clear by comparison with the famous city plan of Francesco Rosselli, the so-called "chain map," made only slightly later and surviving in a woodcut from around 1500.⁶⁰ The iconography of the planet gods is completely reconceived for these Florentine copper plate engravings. For the first time all planets drive their own wagons, not just the sun and moon. Each of these

⁵⁹ A complete series is in London, British Museum, A III 1–7. A.M. Hind, *Early Italian Engraving*, vol. 1 (London: 1938), pp. 77ff. J.A. Levenson, K. Oberhuber, J.L. Sheehan, *Early Italian Engravings from the National Gallery of Art*, Exhibition catalogue (Washington: 1973), pp. 13ff. Blume 2000 (as in n. 6), pp. 183ff.

⁶⁰ There is surviving only one woodcut copy by Lucantonio degli Uberti, in Berlin, Staatliche Museen, Kupferstichkabinett, I.N. 899–100.



Fig. 10.39: London, British Museum, Engraving by Baccio Baldini (?), Mercury and his children



Fig. 10.40: London, British Museum, Engraving by Baccio Baldini (?), Luna and her children

wagons is drawn by a pair of different beasts. The figures of the planets themselves are dressed in splendid garments, calling to mind festive or theatrical costumes. Each planet holds an object in hand and wears different headgear. These attributes are more or less precisely drawn from the ancient iconography.

The connections to the self-image of the Florentine elite in these engravings of Baccio Baldini are so numerous that the composition must obviously have come out of this ambience. They belong to the specific iconographic culture of the leading Florentine families, who showcased their ideals even in their practical furnishings, as we see in the *cassoni* or *deschi da parto*, as well as in the splendour of their festivities. Underneath the magnificent triumphal march of the planets the flourishing life and the grandiose celebrations of Medici Florence unfold, in which the viewers supposedly feel involved. Thus these series of images comprise a clear project of self-identification, which in the end might serve to help stabilize the social and political conditions of Medici rulership.

The Florentine copper engravings are a systematic adaptation of the older woodcuts from Basel. In spite of all the modifications, the main characteristics of the original iconographic concept are taken over and only adapted to a new and (if one will) more modern context. The success of the new series was enormous. For the next 200 years the notion of the planet gods and their children is based on these copper plates. Practically, there is no single astrological image that does not take up one or another element from these engravings. This is so not only for the Italian cultural context but also for Transalpine Europe. Most of the woodcut illustrations used to accompany astrological texts in the early printed books likewise take the planets and the details from these prints by Baccio Baldini. Here we see the decisive influence of this new medium. The great diffusion of book and graphic printing determined an unprecedented burst of iconographical imagination. Thus we find a starry sky painted in the vaulted ceiling of the university library in Salamanca, where the images are taken directly from the woodcut depiction of the publisher Ehrhardt Ratdolt, which had been printed in the Venice, 1482, edition of Hyginus.⁶¹

⁶¹ Gisela Noehles-Doerk, "Die Universitätsbibliothek von Salamanca im 15. Jahrhundert und ihr kosmologisches Ausmalungsprogramm," in *Ikonomie der Bibliotheken*, ed. Carsten-Peter Warncke (Wiesbaden: 1992), pp. 11–41.

Summary

Thus in conclusion it seems clear that in images, only general astrological principles were depicted. Among the most widely disseminated was the image of the seven planets with their houses, either in the sequence of the weekday gods or in their cosmological order. Sometimes these are combined with the course of the year through a depiction of the series of the zodiacal signs and the works of the months. Specific constellations or horoscopes are only very rarely found. Exceptions are the cupola paintings over the altar of the Old Sacristy in San Lorenzo in Florence, serving as the burial chapel of the Medici family, which we have not discussed here.⁶² A further exception may be found in the garden loggia of Agostino Chigi in Rome from the beginning of the 16th century, described above. Depictions of the planets and along with them, astrological imagery can found after late Antiquity, for the first time at the court of the Hohenstaufen emperor Frederick II in Southern Italy at the beginning of the 13th century. Later the Italian city-states take up this theme in their communal iconographic programs. Most important is here the fresco decoration by Giotto in the town hall (Palazzo della Ragione) of Padua at the beginning of the 14th century. Starting with the work of Giovanni Boccaccio, and proceeding through the whole 15th century, we can observe something like a return to Antiquity in planet iconography. This leads to various connections between astrological and humanist interests. Decisive novelties again appear in the Basel woodcuts around 1430. The copper engravings based on these, done around 1460 by Baccio Baldini in Florence, establish the features of the iconography of the planets for centuries. Thus the newly developed graphic media of the 15th century made a visual idea of the astrological powers accessible for most people.

⁶² Blume 2000 (as in n. 6), pp. 126ff. Dieter Blume, "Astrologia come scienza politica—Il cielo notturno della sagrestia vecchia di San Lorenzo," in *L'art de la Renaissance entre science et magie*, ed. Philippe Morel, Collection d'histoire de l'art de l'Académie de France à Rome / Villa Médicis, vol. 5 (Paris: 2006), pp. 149–164.

CHAPTER ELEVEN

READING THE PERUVIAN SKIES

Claudia Brosseder

Saturn, Idolatry, and Incan Astronomy

According to Antonio de la Calancha (1584–1654), there was no doubt: Indians were superstitious because they stood under the influence of Saturn¹—the most fearful planet in the European tradition. Like other 16th and early 17th century scholars in the Spanish colonies, Calancha held that the lives of the indigenous people were astrologically determined.² However, his linking of planetary influences with superstition and idolatry was exceptional. Usually, not the stars but rather insufficient Incan and Andean knowledge of the nature of the heavens was believed to be at the root of persistent Andean idolatry. The standard 17th- (to 19th-) century opinion held that Incan as well as contemporary Andean astronomy lacked sophistication. Allegedly, people living under the Incan regime and contemporary Andeans had knowledge of only three planets (Sun, Moon, and Venus) compared with the Europeans' seven planets; moreover, they disregarded stellar effects on humans.³ Instead of considering the generative effects of the planets and the zodiac, Andeans venerated "Collca (the Pleiades), Urcuchillay (possibly a star in Lira), Chuqui chin-chai, Machacuay," and sometimes the black holes of the Milky Way for their generative effects on "livestock, tigers, bears, lions, serpents, and

¹ This is a slightly revised version of an article first published under the title: "Astrology in seventeenth century Peru," in: *Studies in History and Philosophy of Biological and Biomedical Sciences* 41 (2010): 146–157. On Calancha see A. De la Calancha, *Crónica moralizada del orden de San Agustín en el Perú...* (Barcelona: 1639), p. 499, with respect to the Indians of Cuzco.

² See, for example, J. de Matienzo, *Gobierno del Perú (1567)* (G. Lohmann Villena, Ed.) (Paris & Lima: 1967) [Institut français d'études andines], p. 17. For a summary of this discussion, see J. Cañizares-Esguerra, "New World, New Stars: Patriotic Astrology and the Invention of Indian and Creole Bodies in Colonial Spanish America, 1600–1650," *American Historical Review* 104 (1999): 33–68.

³ G. de la Vega, *Comentarios Reales de los Incas* (A. Miró Quesada S., Ed.) (3rd ed.) (2 vols.). (Mexico: 2005), vol. 2, pp. 118–123.

other animals.”⁴ According to the reports of missionaries from various outposts in the country, colonial Andeans continued to celebrate elaborate rituals in the Incan manner, hoping to appease the dreadful effects of eclipses.⁵ Last but not least, it was argued that the Incan and Andean concept of the heavens was ignorant of the eleven heavenly spheres in which God carefully maneuvered the *primum mobile*, aided by the Christian saints and the Virgin Mary.⁶ The indigenous writer Guaman Poma de Ayala, in his attempt to prove the Christian wisdom of the Andean people he admired, was a rare exception to the orthodoxy of Peruvian chroniclers. Even though his work remained unpublished and was known only in part by contemporary Peruvians, Guaman Poma de Ayala in his ambitious letter to King Philip II in Spain shows his conviction that the Amerindians had once been—and still were—great astronomers and astrologers. They had resisted Incan “idolatry” and apparently remained unimpressed by Christian indoctrination. A man by the name of Juan Yunpa, for example, was still observing the path of the sun and regularly announced to his fellows the proper times for sowing and harvesting. He paid special attention to the solstices, believing that the sun in the winter solstice left its chair in heaven to assume another heavenly chair.⁷ Guaman Poma de Ayala clearly approved of this indigenous astrology as natural and not mixed with “judicial” elements. In that respect Guaman Poma de Ayala was the good Catholic Christian he always aspired to be. For as the contemporary European terminology of the Counter-Reformation made clear, natural astrology could rightly serve agriculture, navigation, and the

⁴ First mentioned in Polo de Ondegardo. *Informaciones acerca de la religión y gobierno de los incas: seguidas de las instrucciones de los Concilios de Lima (1a parte) y del estado . . . (2a parte)* (1571); notas biográficas y concordancias des los textos por Horacio H. Urteaga, biografía de Polo de Ondegardo por Carlos Alberto Romero. Vol. 3. Colección de libros y documentos referentes a la historia del Perú 3–4 (Lima: 1916–1917), [first published 1584]); for quotations see pp. 3–5. José de Acosta repeated this information in his *Historia natural y moral* (Seville, 1590). All translations are my own, unless otherwise specified.

⁵ See, for example, De la Calancha, *Crónica* p. 378, and ARSI [Archivum Romanum Societatis Iesu], Vol. 20, fols. 200 ff.: letter by Petrus Manban and Joseph del Castillo from their mission among the Mojos.

⁶ B. Cobo, *Historia del nuevo mundo* (2 vols., 1653) (Madrid: 1964), Vol. 1, p. 31. A graphic representation of Incan cosmology can be found in Santa Cruz Pachacuti Yamqui Salcamaygua (1993 [early 17th century]).

⁷ F. Guaman Poma de Ayala, *Nueva corónica y buen gobierno* (F. Pease G.Y., Ed.) (new ed.) (3 vols.) (Lima: 2005). On Incan and Andean astronomy, see T. Zuidema & U. Gary, “La constelación de la Llama en los Andes peruanos,” *Revista Anual* 9 (1976): 59–119; S.B. Bauer & S.P.D. Dearborn, *Astronomy and empire in the ancient Andes: the cultural origins of Inca sky watching* (Austin, Texas: 1995).

understanding of changes in the temperaments of the human body (i.e. “medical astrology”). Natural astrology could also be used to forecast the weather and political events. A judicial astrology, in contrast, which cast horoscopes in order to predict an individual’s mishaps or good fortune (outside the realm of medicine) and which allegedly assumed stellar determinism, was once more forbidden by the Catholic Church in the late 16th century and in 1631.⁸ In various ecclesiastic decrees, repeated many times by prolific Spanish Jesuit authors such as Benito Pereira and Martin del Rio, judicial astrology was held to skirt the brink of heresy.⁹ These European Counter-Reformation decrees and works argued with new vigor that the belief in astrological determinism inhibited the free will of human beings. They polemically fused Luther’s doctrine of the “bondage of will” with an alleged astrological determinism and thus reemphasized the old scholastic fear that judicial astrology freed human beings from taking responsibility for choosing virtues over vices—in other words, for choosing God over the devil.¹⁰ But during the first half of the 17th century, the ecclesiastical decrees proved to have little effect even among European Catholic judicial astrologers, who had already successfully resisted various ferocious attacks launched by Pico della Mirandola, the 16th century critic of astrology, and others. Nevertheless, by the mid-17th century, the manifold efforts in Europe to reform astrological prognostications lost their vigor, as new concepts in medicine, astronomy, and natural philosophy were slowly but surely undermining astrological doctrines.¹¹ That was the time when Peruvian Creole scholars were only beginning to

⁸ From the vast literature on European astrology, see S.J. Tester, *A history of Western astrology* (Wolfeboro, NH: 1987); A. Grafton, *Cardano’s Cosmos: The Worlds and Works of a Renaissance Astrologer* (Cambridge, MA: 2000), and B.P. Copenhaver, “Astrology and Magic,” in C.B. Schmitt & Q. Skinner (Eds.), *The Cambridge History of Renaissance philosophy* (Cambridge: 1988), pp. 264–300.

⁹ Landmarks in the Catholic prohibition of astrology were the Tridentine Rule of 1559 and the bulls of Pope Sixtus V in 1586 and Pope Urban VIII in 1631. On the history of astrology in Spain, see first P. Ciruelo Sánchez, *Reprobación de las supersticiones y hechicerías* (Salamanca, 1541) (AV. Ebersole, Ed.) (Valencia: 1978); L. Thorndike, *A History of Magic and Experimental Science*, Vol. 7 (New York: 1958), pp. 323–337: “Discussion of magic in Portugal and Spain”; H.C. Lea, *A history of the inquisition of Spain* (4 vols.) (New York: 1966); and J.G. Atienza, *La cara oculta de Felipe II* (Barcelona: 1998).

¹⁰ See C. Brosseder, *Im Bann der Sterne: Caspar Peucer, Philipp Melanchthon und andere Wittenberger Astrologen* (Berlin: 2004), pp. 257–289.

¹¹ G. MacDonald Ross, “Okkulte Strömungen,” in J.P. Schobinger (Ed.), *Die Philosophie des 17. Jahrhunderts*, Vol. 1.1. *Allgemeine Themen: Iberische Halbinsel, Italien* (Basel: 1998), pp. 196–224; and P. Fara, “Marginalized practices,” in R. Porter (Ed.), *The Cambridge History of Science*, Vol. 4: *Eighteenth-Century Science* (Cambridge: 2001), pp. 485–507.

debate which kind of astrology their land required. And here, in the Spanish viceroyalties, and especially, in Peru—as will be shown in this chapter—the Counter-Reformation attitudes towards astrology proved to have a much greater impact on scholars than in Europe. They undermined those attempts that in a Renaissance vain attempted to reform Europe's judicial astrology from the perspective of the Southern hemisphere. The Peruvian scholar Antonio de la Calancha was the first to realize that Peru required a new kind of astrology, which I will call a “southern Astrology.” In his *Crónica moralizada* (1639), Calancha lamented that he was alone in observing the Peruvian skies. Working in Sucre, a town in the midst of the Peruvian (nowadays Bolivian) highlands, he felt lonely under the plenitude of the southern skies—skies in which he had spotted fifteen out of forty-nine new constellations and 316 stars out of the 1,022 in the whole universe.¹² He considered this a significant number and a refutation of José de Acosta, who had noted a paucity of stars in the southern skies in 1590.¹³ From his outpost in Sucre, Calancha reflected: “I observed several curiosities, finding many wonders. I found star clusters which are not in the ephemerides, which neither the astrologer's pen nor that of the mariners have ever touched.”¹⁴ The absence of astrological comrades in arms, which Calancha so insistently deplored, gave him a certain freedom to interpret the impact of the southern skies in his own idiosyncratic manner. Wilfully, he twisted some long-established astrological certainties and bestowed a new meaning on them. He attested that Lima lay under the influence of Saturn but denied that it therefore suffered any negative effects. Even eclipses were beneficent and not disruptive.¹⁵ Calancha apparently tried to turn astrology on its head—as nature did to the seasons under the southern skies. He was convinced that in Peru the signs of the zodiac and fixed stars did have a new quality, but we—along with him—do not know how they differed, or in which aspects. He desired to write a separate book on astronomical and astrological details of Peru, which would explore these “curiosities” and “wonders” of which no astrologer had ever taken notice. Calancha apparently never fulfilled his promise, as such a book has never been found. In claiming a new southern

¹² De la Calancha, *Crónica* p. 49.

¹³ See J. de Acosta, *Historia natural y moral de las Indias* (Seville 1590). In F. Mateos (Ed.), *Obras del Padre José de Acosta de la Compañía de Jesús* (pp. 1–274). Biblioteca de Autores Españoles, 73 (Madrid: 1954 [1590]).

¹⁴ De la Calancha, *Crónica* p. 49.

¹⁵ *Ibid.*, p. 48.

Astrology, however, Calancha is by no means representative. Other Peruvian Creoles, such as Bernabé Cobo, Juan de Figueroa, and Francisco Ruiz Lozano, disagreed with him.¹⁶ They all insisted that “the sky is only one and the same for all.”¹⁷ And yet their interests in astrology were far from uniform. To date, these differences in the Peruvian discourse about astrology have not yet been fully explored. Jorge Cañizares Esguerra has argued that such Peruvian experts in astrology as Bernabé Cobo and Antonio de la Calancha joined Mexican efforts to establish a patriotic astrology.¹⁸ Using astrological reasoning, these scholars defended Creole identity against European disparagement and at the same time introduced a distinction between Creole and Indian bodies. As the present chapter will show, however, patriotic defence and the construction of two kinds of bodies were only two among several motives that shaped 17th century Peruvian astrology, which in fact—as we will see—gave rise to astronomy in Peru. It is possible to distinguish five phases in the Peruvian discourse about astrology. The first phase, from the late 16th to the beginning of the 17th century, saw the Inquisition’s persecution of a judicial astrology that predicted the fate of individual human beings. The second phase, from the beginning of the 17th century to 1639, witnessed the failed attempt to establish a southern and patriotic Creole astrology. These phases were characterized by an interest in indigenous astronomy that was later to disappear. In a third phase, from 1655 to 1680, several factors—the exchange of astronomical data between Peru, Mexico, and Europe; medical astrology; and the demand for political prognostications—encouraged an astronomy that calculated celestial data for Peru. This new Peruvian astronomy then shaped a fourth phase from 1680 to 1735, which was in fact the apogee of the astronomical and astrological discourse in Peru. During that time Peruvian scholars began to publish astronomical data in annual calendars, which they put to new use in supporting a basic medical and natural astrology: that is, for predictions of sicknesses, earthquakes, and other events that were to threaten the integrity of the Peruvian viceroyalty. These astronomical data were much in demand, not least because

¹⁶ Under the heading “Creole,” I include those Spaniards who came to live in colonial Peru.

¹⁷ For example, F. Ruiz Lozano, *Tratado de cometas, observación, y juicio del que se vio en esta ciudad de los Reyes, y generalmente en todo el mundo, por los fines del año de 1664, y principios [sic] deste de 1665. Compuesto por el Capitán Francisco Ruiz Lozano Cosmógrafo mayor deste Reyno, y Catedrático de prima de matemáticas en esta dicha ciudad* (1665). (Lima: s. a.), fol. iv.

¹⁸ See n. 2 above.

a symbolic reading of nature had begun to prevail among Creole scholars and ecclesiastics, who used the decipherment of celestial occurrences to aid their close reading of God's will. This symbolic reading of nature culminated in the veneration of the Virgin Mary as the mother of all celestial influences and at the same time the conqueror of the apocalyptic beast. The discourse on astrology again gained an anti-idolatry dimension. In the fifth and last phase, from the 1750s to the late 1780s, astronomy gathered momentum with Pedro de Peralta and Cosme Bueno. During the course of their lives, however, both scholars began to raise doubts about the validity of astrological political prognoses, and Cosme Bueno slowly withdrew himself from medical astrology. This time the critique was inspired not by the Church, but by Enlightenment thought. In order to highlight how the astrological discourse during the second half of the 17th century called into existence an astronomy that was to serve medical, natural, and political prognostications, as well as how concerns about idolatry shaped the discourse on astrology at its beginning and end, and in order at the same time to explore the limits of astrological practice in Peru, the present article focuses on four contexts that are of larger interest in the history of science in the Americas. First, after sketching the impact of the Peruvian Inquisition on late 16th and early 17th century astrologers, I assess the role of medical astrology in Peru by discussing Juan de Figueroa's *Opusculo de astrología en medicina* (Lima, 1660). Second, to show how Peruvian scholars pursued natural astrology and were stimulated by Mexican scholars, giving rise to detailed astronomical investigations, I investigate Ruíz Lozano's *Tratado de cometas* (Lima, 1665) and point to developments in the 18th century. Third, to explore the limits of medical astrology in practice in indigenous, Mestizo, and Creole society, I draw on Francisco Bermejo y Roldan's *Discurso de la enfermedad sarampión* (Lima, 1694) as well as on two exemplary accounts of miraculous healings. Fourth, to show how the symbolic reading of the heavens showed an ongoing struggle with idolatry and the fear of God's wrath, I discuss how Jesuit interest in deciphering hieroglyphs carried natural astrology into the 18th century.

Successes of the Inquisition: Peru's Road toward Natural Astrology

A problem in the history of Peruvian astrology has long puzzled scholars. In contrast to the documentary richness of colonial Mexico in this regard, in Peru for much of the colonial period we almost entirely lack manuscripts

containing judicial prognostic astrology.¹⁹ The scarcity of judicial astrological documents to some extent reflects the unhappy history of archival material from the Peruvian Inquisition. But it also points to the vigilance of the Inquisition in Peru. From its very beginning in 1569, the Peruvian Inquisition focused on persecuting judicial astrologers.²⁰ Sarmiento de Gamboa, for example, was tried because of his interest in talismanic astrology and his astrological services to a viceroy. Jesuits, Dominicans, and other friars were involved in such activities; the Inquisition showcased the heresies of Fray Francisco de la Cruz, whose legal proceedings uncovered a clandestine network of prominent judicial astrologers and magi. Investigations of a few other people who mixed traits of judicial and talismanic astrology were to follow in the late 16th century.²¹ For the 17th century, however, testimony on judicial astrology rarely enters the Inquisition records. Only a small number of magico-astrological treatises that the Inquisition considered heretical have survived in Santiago de Chile's Archivo de la Nación. The paucity is surprising in light of the Inquisition's edict released in 1629 "against judicial astrologers, chiromancers, hechizeros, and similar people," which indicates that the Inquisition saw itself as confronting the illegitimate practice of judicial astrology.²² Throughout the 17th century, Peruvian censors also forbade judicial prognostications.²³ Yet at the same time, the basic principles of astromedicine were part of the medical curriculum of Lima's San Marcos University throughout the 17th century.²⁴ And in Jesuit institutions, students were familiarized with

¹⁹ For example, Archivo General de la Nación, Mexico, Inquisición, Vol. 303, fols. 414–424; Vol. 290, esp. fols. 250–254; Vol. 314, esp. fols. 7, 206–207, 260–264; Vol. 367, esp. fols. 1, 268 f., 269–272; Vol. 1497, fols. 1, 201–209, 233–244; Vol. 1497, fol. 280r; Vol. 1525, fols. 1–13; Vol. 312, esp. unnumbered fol. [87]r–v. On Mexican astrology, see Trabulse (1983, 1984), and Alberro (1981).

²⁰ On the following, see C. Brosseder, *Clandestine Dialogues: Knowledge and Belief between Colonial Peru and Early Modern Europe* (Habilitationsschrift, University Library of Munich 2011).

²¹ Archivo Historico Nacional, Madrid, e.g., Inquisición: libro 1027, f. 134; Diego de la Rosa (1580); f. 280: Fray Pedro de Mendoça (1582/3).

²² See R. Millar Carvacho, *Inquisición y sociedad en el Virreinato Peruano: Estudios sobre el tribunal de la Inquisición de Lima* (Santiago de Chile: 1998). Most of the documents focus on hechizeros (sorcerers), however.

²³ See P. Guibovich Pérez, *Censura, libros e inquisición en el Perú colonial, 1570–1754* (Seville: 2003).

²⁴ For a 17th century reference to the study of astrology, see D. León Pinelo, *Semblanza de la Universidad de San Marcos* (Lima: 1949 [First published 1648]), p. 50. In the 16th century, Lizárraga was still deploring the lack of instruction in astrology (see R. de Lizárraga,

Galen's and Hippocrates' medicine and Aristotelian cosmology.²⁵ Medical astrology required the casting of a horoscope, and scholars could have used these horoscopes for judicial astrological ends. Nevertheless, in the public discourse about astrology in Peru only the effects of the stars on a human body, general prognostications of political misfortune in the wake of comets and eclipses, and forecasts of earthquakes came to be held legitimate. And even the practice of medical astrology remained somewhat suspect. In 1655, a Spanish-born Creole named Juan de Figueroa (1583–1665) desired to provide a thorough guide to using astrology in medical practice. He authored the only surviving handbook of astrology in colonial Peru, printed in 1660.²⁶ Juan de Figueroa was neither a professor of medicine nor a medical doctor himself. His relation to—and impact on—contemporary medical doctors at the university is unclear. Instead, Figueroa was an accomplished politician and a “familiar” of the Inquisition, who denounced heresies. He served on Lima's town council, and as the city's mayor.²⁷ In private, he seems to have pursued astro-medical interests with great passion.

Indeed, his handbook on medical astrology is ambitious. First, he guides the reader through the jungle of Europe's astro-medical theory and hails the use of astrology in medicine, navigation, and agriculture. Second, he wants to prove the identity of stellar effects in the north and south. Third and last, he prophesies a great empire in South America as well as the resurgence of Spain. In defending the necessity of astrology in medical practice, Figueroa, much like his many 16th century European predecessors, amassed astrological data about the effects of constellations on the human body. Figueroa was a deft collector, concealing that his

Descripción del Perú, Tucumán, Río de la Plata y Chile (I. Ballesteros, Ed.) (Madrid: 1986 [1594]). According to Lastres, astrological doctrines dominated teachings in medicine until the 18th century: J. Lastres, *Historia de la medicina peruana*, Vol. 2. *La medicina en el virreinato* (Lima: 1951), pp. 50, 82, 183. However, Lastres does not refer to the actual practice of astrological medicine.

²⁵ See L. Martín, *The Intellectual Conquest of Peru: The Jesuit College of San Pablo, 1568–1767* (New York: 1968).

²⁶ J. de. Figueroa, *Opusculo de astrología en medicina, y de los términos, y partes de la astronomía necesarias para el uso della: compuestos por Joan de Figueroa, familiar del Santo Oficio de la Inquisición, regidor, y tesorero de la casa de la moneda de la ciudad de los reyes, veintiquatro ensayador, y fundador mayor de Potosi. Dirigidos al Exc.mo. Señor Don Luis Henriquez de Guzman Conde de Alba de Aliste, y Villafior, Grande de España, Virrey, Gobernador, y Capitan general de los Reynos del Perú, Tierra firme, y Chile* (Lima: [1660]).

²⁷ G. Lohmann Villena, ed., *Los regidores perpetuos del Cabildo de Lima (1535–1821)* (2 vols.) (Seville: Excma. Diputación Provincial de Sevilla, 1983), Vol. 2, pp. 130–133, 148.

astrological information is drawn mainly from Galen, from the aphorisms ascribed to Hippocrates, and from those commented on by Cardano. Always remaining in the uncontested areas of scholastic cosmology, Figueroa also referred to Hermes Trismegistus, Ficino, Albumasar, Alcabitius, and Hali Abenragel, among others.²⁸ When the author introduced his own astro-medical experiences with a Lima-born Creole who fell sick on 29 November 1651, he focused on the position of the moon and the technical aspects of how to elaborate a horoscope²⁹—specifically, the conversion of Andreas Argoli's astronomical data from the coordinates of Rome to those of Lima. Since Figueroa's primary aim is to show that he remained deeply anchored in Europe's medical astrology, he, unsurprisingly, paid special attention to the analysis of critical days and to prediction of the proper time for bleeding.³⁰ He was convinced that stellar effects were alike everywhere in the world. The fixed stars were the same in the Southern and the Northern Hemispheres, even if some were hidden from observers' eyes in one or the other location. In any event, the fixed stars had already imprinted the planets with their qualities, which the planets then distributed uniformly across the continents. Because of the basic sameness of the heavens, Figueroa also regarded Europe's astrological doctrine as valid throughout the entire world. He thus refuted Calancha's claim for a southern Astrology.³¹ Any possible differences in the effects of the stars on the inhabitants of South America were the result of differences in "matter," or physical makeup, and of differences in the peculiar climate of the mountains. Human beings living in the high Andes reached the medium sphere of the air and therefore received less stellar influences than those in the plains, the "llanos."³² When Figueroa reviewed the history of the sickness of an individual, he automatically considered a Creole body in the plains; thus the special analysis required when dealing with someone of a different ethnicity who lived in the high Andes could be ignored. For someone like Figueroa, who had access to the many classics of Europe's astrological tradition, using astrological expertise to inform judicial prognoses would have been an easy task. But

²⁸ In general, Figueroa's outlook on the world is rooted in the Ptolemaic tradition, even though he made reference to Johannes Kepler and once mentions telescopes.

²⁹ Figueroa, *Opusculo*, fol. 105.

³⁰ Compare A. Grafton and N. Siraisi, "Between the Election and my Hopes: Girolamo Cardano and Medical Astrology," in A. Grafton & W.R. Newman (Eds.), *Secrets of Nature: Astrology and Alchemy in Early Modern Europe* (Cambridge, MA: 2001), pp. 69–131.

³¹ Figueroa, *Opusculo*, fols. 14r, 124r.

³² *Ibid.*, fols. 14r–15v, 111 ff.

Figueroa refrained from analyzing the individual houses in a horoscope. With only one exception—as we will see in a moment—he avoided judicial astrology. Yet he did explain how astrological prognostications could be useful for an individual life beyond medical introspection. Just as Tommaso Campanella had done before him, Figueroa claimed to have purged Arabic superstitions from the doctrines, by which he meant election, or the choice of a fit time for undertaking some business. Nonetheless he knew his Arabic classics very well and was willing to accept elections for travels.³³ He is also a follower of Albumasar's theory of the great conjunctions, having witnessed them in 1603, 1623, and 1643. They signified the usual misfortune but also promised a peak time of South American intellectual production.³⁴ Since Figueroa—along with other European astrologers—was convinced that the brain received imprints of the stars, he shared with his readers the information needed to forecast “ingenios”: that is, an individual's inclinations toward a certain profession.³⁵ “Mercury in good aspect with the moon . . . and in the signs of Sagittarius and Gemini” makes a good diviner and magician, he noted.³⁶ “Costumbres” (here in the sense of mental states), such as piety, hope, ignorance, fear, anger, and desires, which resulted from the organization of a person's brain and his or her temperament, were also subject to stellar prognoses. Idolatry was not included in this list. Figueroa carefully clothed all these prognostications in a rhetoric of “inclination,” hailing free will and reason. Therefore, this section—which, ecclesiastical decrees suggest, could have aroused suspicion—passed the censors' eyes.³⁷ Alonso de Peñafiel, the Jesuit who censored Figueroa's work, was in any event accustomed to his order's ongoing practice of classifying individuals by temperament. A thorough analysis of the temperaments of each Jesuit enabled the order to decide who was to become a missionary among Indians, a preacher for

³³ Ibid., fols. 326v.

³⁴ Ibid., fols. 343r.

³⁵ Ibid., fols. 194–211.

³⁶ Ibid., fols. 208v.

³⁷ Without further archival material, we cannot determine why the book did not appear in print until five years after both the Jesuit Alonso de Peñafiel (a philosophy professor) in Lima and the Franciscan friar Francisco de Borja had approved of its imprint. Unusually, Borja from Lima's Franciscan Convent made revisions on behalf of La Paz's bishop and not on behalf of the archbishop serving Lima. The printing process may have been deferred because of Figueroa's horoscope analysis (discussed later in this essay) or because of this section on morals.

Creoles, or a pharmacist in a Jesuit college.³⁸ References to natural astrology were thus widespread. Unlike Calancha, who called for a reform of astrology, and Europeans including Girolamo Cardano, Luca Gaurico, and Caspar Peucer, who offered solutions to the problematic lack of accord between prognostication and reality, Figueroa saw no need for a thorough overhaul.³⁹ Only weather forecasts required a certain adaptation to southern—that is, South American—standards.⁴⁰ Figueroa's astrological and astronomical outlook is oriented more backward than forward. Figueroa steadfastly defended Aristotle against, as he said, the challenge posed to his cosmology by "a Jesuit" who had observed a comet with a telescope.⁴¹ Nor are Figueroa's data about celestial influences exceptional or proof of a magical-astrological worldview.⁴² He simply wanted to provide evidence of how the stars had calculable effects on the human bodies. And he wanted to show that South America, even in the approaching times of prosperity, would remain a loyal dependent of Spain. Spain, in turn, would experience a great resurrection under Philip IV (r. 1621–1665).⁴³ To generate this information Figueroa drew the king's horoscope, which he sent to Spain via Viceroy Alba de Aliste. The viceroy was known for his contentions with the Peruvian Inquisition.⁴⁴ Thus in private, Figueroa hinted at his firm belief in the value of astrological data to foresee one's future. But on the whole Figueroa, and others with him, had learned to be cautious.

³⁸ See, for example, A. de Egaña, ed., *Monumenta Peruana* (8 vols., 1565–1604) (Rome: 1954–1986), Vol. 7, p. 232.

³⁹ In Europe astrologers strove to reform their art either by comparing contemporary horoscopes with ancient astrological wisdom or by introducing logic into astrological reasoning.

⁴⁰ Figueroa, *Opusculo*, fols. 295 ff. Although Bernabé Cobo, Antonio de la Calancha, and Juan de Figueroa felt compelled to refute Aristotle's theory of the "torrid zone," Peru remained a startling exception. Seasons appeared to differ between regions a few leagues from each other, even though they lay in the same geographical sphere and were hit by the rays of the sun at the same angle. They all joined José de Acosta in pointing to the unusual winds to explain these startling aberrations. See De la Calancha, *Crónica*, p. 65; Cobo, *Historia*, Vol. 1, pp. 24, 71, 108.

⁴¹ Figueroa, *Opusculo*, fol. 335 (with a sideswipe at Christoph Scheiner).

⁴² Cf. M. Suárez, "Ciencia, ficción e imaginario colectivo: la interpretación de los cielos en el Perú colonial," in M. Lemlij & L. Millones, eds., *Historia, memoria y ficción* (Lima: 1996), pp. 312–319.

⁴³ Figueroa, *Opusculo*, fol. 348v.

⁴⁴ Ibid. On Viceroy Alba de Aliste, see M. de Mendiburu, "Luis Enríquez de Guzmán, Conde de Alba de Aliste," in idem, *Diccionario histórico-biográfico del Perú*, Vol. 6 (2nd ed.) (Lima: 1933), pp. 214–233; and L. Hanke, ed., *Los virreyes Españoles en America durante el gobierno de la Casa de Austria: Perú*, vol. 4 (Madrid: 1979), pp. 85–150.

Mexico and the Invention of a Peruvian Astronomy

When Figueroa was painstakingly explaining how to convert astronomical data to the horizon of Peru—which was a prerequisite for correct astrological prognostications—he touched on a problem that Peruvian scholars only began to solve in his lifetime. A new epoch in the pursuit of astronomical and natural astrological interests began in Peru in 1655, when Viceroy Luis Enriquez de Guzman, Conde de Alba de Aliste (r. 1655–1661) came from Mexico to the shores of the Pacific with a number of Jesuit-trained scholars—among them a sea captain, Francisco Ruiz Lozano (1607–1677). In 1657 Ruiz Lozano, appointed “cosmógrafo mayor,” became the founding father and first mathematician of Lima’s Academia Náutica (Naval Academy), an institution that educated pilots to better defend the Pacific and that included a hospital for mariners, the “hospital de Espíritu Santo.” Ruiz Lozano had been a student of Fray Diego Rodríguez of Mexico (1596–1688), the Mercedarian friar who revolutionized Mexican astronomy.⁴⁵ In Peru, Ruiz Lozano quickly found admirers. In 1665 Juan de Medina, a presbyter of Lima, composed a solemn, albeit simple, poem on his friend Ruiz Lozano. “It is your talent,” Medina declared, “that lets us forget Cardano!”⁴⁶ After making this enigmatic reference to the great astrologer, whose orthodoxy had been questioned in Europe, Medina prophesied that the talented man would save Peru, because he had forecast the mighty effects of a comet that had appeared in Lima’s sky on 15 December 1664. The first omens of this fearful comet had already been felt in Ica, two hundred miles south of Lima, whose inhabitants were shaken by an earthquake more than six months before.⁴⁷ Was Ruiz Lozano in fact a new Cardano, whose fame as a medical doctor and astrologer had apparently made its way to the shores of the Pacific? Indeed, much like Cardano, Ruiz Lozano was an inquisitive scholar. But unlike the Italian, the sea captain was ambivalent about astrology. In his *Tratado de cometas* (1665) he was to prove that the comet he had observed in 1664 was of superlunary and not sublunary origin. Moreover, he disagreed with the ancient assumption that comets were generated from the earth’s exhalations. Much like Diego Rodríguez in his criticism of Aristotelian cosmology, Ruiz Lozano argued

⁴⁵ E. Trabulsee, *El círculo roto* (Mexico City: 1982), pp. 25–65. Diego Rodríguez’s follower was Carlos Sigüenza y Góngora (1645–1700).

⁴⁶ Ruiz Lozano, *Tratado*, pref.: “Y pues es tu ingenio quien pone en olvido a Cardano; este Imperio Peruano goze con luz peregrina, Lozano, de tu doctrina De tu doctrina lo sano.”

⁴⁷ *Ibid.*, fol. 36r.

that the comets originated from stray material in the universe. Therefore, he believes that comets themselves had no effects; they simply transmitted the effects of the great planetary conjunctions that preceded them. Even though Ruiz Lozano was more interested in discussing the physico-astronomical nature of the comet than its effects, he alleged that comets were the “mute prophets” of God’s rage.⁴⁸ As such, the comet of 1664 was of Martian nature and had already acted like a “wild animal that spilled its poison over deserts.”⁴⁹ As a result, changes within the public sphere (*cosas publicas*) were to be expected. From 1665 to 1668, earthquakes would follow, and floods as well as rebellions were likely to occur. Much like comets, different conjunctions of Jupiter and Saturn, e.g. in 1598, in 1614, and in 1623, promised evil and stood at the beginning of the Dutch threat in Peru and in Chile. Because his prognostications were cautiously phrased, Ruiz Lozano’s censor, Aller Usátegui, called his efforts part of an “astrología racional,” a rational astrology. Aller Usátegui himself was more inclined than the captain to an allegorical reading of nature. According to him, Phaëthon was not the mythical Greek hero familiar to Ovid’s readers but in fact a ferocious comet. He was convinced that comets were signs of God’s anger and therefore exclaimed: “comets are dark shadows . . . which require the light of the Catholic belief.”⁵⁰ The time had come to finally turn to penitence. But as a moralist, and quite paradoxically, Aller Usátegui cautioned the reader not to put too much trust in the reliability of prognostications. No astrologer, he argued, was able to definitely predict what would happen. A comet could promise not just negative but also positive events on earth—it simply depended on the viewpoint of the one who interpreted the data. With this rhetoric of a double-sided reading of nature, also suggested by Ruiz Lozano, both the author and the censor stood in the tradition of the Mexican friar Diego Rodriguez. And as we will see in a moment, Peruvian scholars adopted, but at the same time put their own twist on, another Mexican approach to modifying Spanish parameters: Rodriguez’s claim that the Immaculate Virgin mediated the effects of the stars.⁵¹ However, Ruiz Lozano’s Mexican experience and the Academia Náutica, under the auspices of Viceroy Conde de Alba de Aliste, marked the beginning of intense astronomical studies in Peru. Ruiz Lozano was the first to publish yearly “reportorios” or almanacs, in colonial Peru;

⁴⁸ Ibid., fol. 22r.

⁴⁹ Ibid., fol. 4r.

⁵⁰ Ibid., pref. [22].

⁵¹ Cañizares-Esguerra “New World,” p. 52.

issued from 1654 to 1659, these are no longer extant.⁵² It would be decades before Peruvian scholars regularly calculated ephemerides.⁵³ For most of the 17th century, scholars interested in astrology converted European data to the longitude of Peruvian cities, usually Lima. Calculating longitude was, of course, a major problem of the time, and Peruvian scholars disputed the results for quite a while. In 1580 and 1582, a royal decree issued by Philip II had instructed scholars in the New World to observe eclipses in order to calculate their longitudinal positions,⁵⁴ but the data collected were far from consistent. Was Lima four hours and thirty minutes away from Seville, as the royal cosmographer Padre Sánchez had suggested? Or was it rather six hours and fifteen minutes distant from the motherland, as Calancha claimed in 1639?⁵⁵ In the beginning of the 17th century, Peruvian scholars explained their failure to make progress in proper astronomical observation by pointing to their lack of reliable instruments, but not all could use that excuse. Lozano admitted that he had good astronomical instruments⁵⁶—not surprising, given his background as a sea captain. The Jesuits in the New World were especially well equipped. Nicolò Mascardi, a Jesuit in Chile, apparently was master of a little astronomical observatory in Buena Esperanza, supplied with globes, spheres, and other astronomical instruments; he sent his data to Athanasius Kircher.⁵⁷ The Jesuit Colegio San Pablo in Lima owned “four globes” and “two armillary spheres,” and at some point acquired “a Newtonian reflecting telescope.”⁵⁸ As soon

⁵² J.T. Medina, *La imprenta en Lima (1584–1824)* (4 vols.) (reprint ed.) (Santiago de Chile: 1966), Vol. 2, pp. 26–27, 32, 36, 43. They are only mentioned in Ruiz Lozano’s letter of appointment as royal cosmographer.

⁵³ F. Schwab, *Los almanaques peruanos y guías de forasteros, 1680?–1874* (Lima: 1948).

⁵⁴ Archivo General de las Indias, Indiferente 427, Lima 30, fols. 312–313.

⁵⁵ De la Calancha, *Crónica*, p. 66. In *Repertorio de los tiempos e historia natural de esta Nueva España* (México, 1606) (Martínez, 1991 [1606]), Henrico Martínez had already included a list of coordinates for Peruvian cities. Disagreements remained part of the astronomical discourse into the 18th century. See Pedro de Peralta, who in *Lima fundada. O conquista del Perú: Poema heroico en que se decanta toda la historia del descubrimiento, y sujeción de sus provincias por Don Francisco Pizarro* (Peralta: 1732), argued that Lima was on “12 grados, 15 min.”

⁵⁶ Lozano, *Tratado*, preface to the reader: “aver llegado a mis manos algunos instrumentos tan maquinosos, como se requieren para la mas rigurosa, y precisa observacion, por servir mas a mi patria.”

⁵⁷ See G. Furlong, *Nicolás Mascardi y su carta—relación 1670* (Buenos Aires: 1963).

⁵⁸ Archivo Historico Nacional, Madrid: Clero-Jesuitas, libro 363, fol. 390v et seq. The college library was equally well equipped with literature on astrology; among other works, it possessed Francesco Giuntini’s *Speculum astrologiae* (Lyon: 1573), Alessandro degli Angeli’s *In astrologos coniectores libri quinque* (1615), different ephemerides from different times, and various medical books (for example, Hippocrates’ *Prognosticon*).

as Jesuit missionaries entered the provinces, however, they felt the absence of instruments and books. As late as 1739, the Jesuit Buenaventura Suarez in Paraguay sighed: "I could not compose astronomical tables because I lack instruments, which hadn't been brought to these provinces."⁵⁹ But even the lack of specific instruments did not prevent the Jesuits from becoming heavily involved in astronomical observations throughout the 17th century. Ruiz Lozano, for example, could not have described the comet's path through the southern constellations of Hydra, Argo Navis, and Canis Maior had he not drawn information from a great network of scholars, including pilots, Mercedarian friars, and, of course, the Jesuits who had once been his own teachers. He consulted captains in Arica and as far away as off the coast of San Tomé in Costa Rica—naming them individually so as to enhance the credibility of their data. Members of this network included the Jesuit Juan Bautista Cisato and the captain Bernardino Liaño y Leyba in Arica; others reported their astronomical data from Morro Moreno in the Atacama Desert, from San Bernardo de la Frontera in Paraguay, and from San Pablo y San Vicente in Brazil.⁶⁰ Ruiz Lozano's group of informants was but the tip of the iceberg. The 17th century network of Jesuits in Peru, Mexico, Chile, and Brazil included Juan Bautista Poza in Peru, whom Calancha hailed as a great savant in astrology; Bernabé Cobo, who was in Mexico in the 1630s and later came back to Peru; Ramón Koenig, who came from Mexico to Peru; Diego de Sisneros in Mexico; Alonso de Ovalle and Nicolas Mascardi, both in Chile; Valentin Stansel in Brazil; Juan de Vallejo in Santa Cruz della Sierra; and Bernardo Caverio among the Mojos in Bolivia.⁶¹ These scholars not only sent their informa-

⁵⁹ B. Suárez, *Lunario de un siglo, que comenzava en su original por enero del año de 1740, y acaba en diziembre del año de 1841* . . . (Barcelona: [1740?]) pref.

⁶⁰ See Ruiz Lozano, *Tratado*, fols. 23r, 33r, 38v, 39r.

⁶¹ Peruvian scholars of the 17th century often called the Jesuits "los sabios," the ones who know. See De la Calancha, *Crónica*, p. 239; Ruiz Lozano, *Tratado*, fol. 22r. For the Jesuit network in the Americas and their contact to Athanasius Kircher, see C.Z. Camenietzki, "The celestial pilgrimages of Valentin Stansel (1621–1705), Jesuit astronomer and missionary in Brazil," in M. Feingold, ed., *The New Science and Jesuit Science: Seventeenth Century Perspectives* (Dordrecht: 2003), pp. 249–270; with attention to Mexico, see I. Osorio Romero, *La luz imaginaria: Epistolario de Atanasio Kircher con los novohispanos* (Mexico: 1993); R. Kramer, "... ex ultimo angulo orbis: Atanasio Kircher y el Nuevo Mundo," in K. Kohut & S.V. Rose (Eds.), *Pensamiento europeo y cultural colonial* (Madrid: 1997), pp. 320–377; P. Findlen, "A Jesuit's books in the New World: Athanasius Kircher and his American readers," in P. Findlen, ed., *Athanasius Kircher: The Last Man who Knew Everything* (New York: 2004), pp. 329–365; and C. Bargellini, "Athanasius Kircher e la Nuova Spagna," in E. Lo Sardo, ed., *Athanasius Kircher: Il museo del mondo* (Rome: 2001), pp. 86–91. On the reception of Athanasius Kircher in colonial Peru, see Brosseder (Forthcoming).

tion to Rome, Madrid, and Seville but also—as in the case of Ruiz Lozano—to Creoles in the Americas. With their enthusiastic investigations into the astronomical properties of the skies in South America, the Jesuits continued to influence Peruvian astronomical studies under the viceroys Don Diego de Benavides y de la Cueva, Conde de Santisteban del Puerto (r. 1661–1667), and Pedro Fernández de Castro, Conde de Lemos (r. 1667–1672)—beyond the era of Ruiz Lozano. Ruiz Lozano's direct successor as “cosmógrafo mayor” was the Jesuit Ramón Koenig (d. 1709) who was also the teacher of the Conde de Santisteban's son. He held a chair in the “prima de matemáticas” of San Marcos University and constructed the defensive wall in the port of Callao. Koenig and his followers continued the work of Ruiz Lozano and published Spanish-type astronomical calendars that provided basic information to support a natural astrology focused on sicknesses, earthquakes, and political turmoil.⁶² This practice finally began to flourish in the late 17th and early 18th century. Earthquake prediction became one of the most important experimental fields of astrology in Peru.⁶³ At the heart of this new demand for natural prognostications was a growing desire to decipher the signs of God's wrath. Jesuit ecclesiastics mainly influenced the discourse on natural astrology by projecting hieroglyphs into the Peruvian skies. Yet before we turn to the hieroglyphs of the heavens, we should examine the ways in which the practice of astro-medicine in Peru was, in fact, limited.

*The Limits of Astro-medicine in Practice:
Indigenous Bodies and Saintry Powers*

Throughout the 17th century, most inhabitants of Peru—with the possible exception of Juan de Figueroa—seem to have viewed medical astrology more as a lofty theory than as a practical instrument. To be sure, medical astrology was taught in Lima's institutions of higher learning, but it left little mark in printed medical treatises. Only the published 18th century almanacs reveal that there had been and was a demand for a basic astrology-based therapy (that is, setting the time for therapeutic interventions).

⁶² Koenig's almanacs are not extant, however. See Schwab, *Los almanaques*, pp. 7–10.

⁶³ See, for example, ARSI, Perú: Vol. 20, fol. 277/81, and J. de Barrenechea, *Nueva observación astronómica del periodo trágico de los temblores grandes de la tierra: Exactamente arreglada a Europa y Asia y de la América a los Reinos del Perú, Chile, y Guatemala* (Lima: 1734).

In general, little attention was paid to the stars when Creole, Mestizo, and indigenous people fell sick, and the practice of medical astrology had a limited impact on Creole, Mestizo, and indigenous society. In particular, I will briefly discuss in the following the limited impact of astrology on indigenous people and the greater impact on Creole society of supernatural healings, which overshadowed the astro-medical discourse. In the first half of the 17th century, Peru, along with Mexico, saw a discussion of differences between indigenous and Creole bodies that were owed to differences in "matter." Bernabé Cobo, for example, argued that the bodily constitution of the indigenous people shaped the extent of stellar and environmental influences.⁶⁴ In his opinion, differences in color of skin among the natives were only in part the result of where individuals lived. A more important factor was the bodily matter of which each white and dark person was made. According to Cobo, the general differences between Creoles and Amerindians were inherited by children from their parents. Cobo paid little attention to specific differences in the bodily constitution of the indigenous people, though he cited different dietary customs to explain why native South Americans had better teeth and why native people did not suffer from urinary problems and kidney stones. He advised Spaniards to profit from these customs. More broadly, it was blood that accounted for the divergences between indigenous people and Spaniards or Creoles—even those who lived under the same general constellations.⁶⁵ Whether and how these distinctions in blood were influenced by the stars were questions ignored by Cobo as well as by Calancha and Figueroa, who made similar arguments.⁶⁶ It was their thesis that indigenous bodies were made of a different "material" than Creole bodies. These authors looked for but could not precisely ascertain naturalistic explanations of bodily

⁶⁴ Cobo, *Historia*, Vol. 2, esp. pp. 15–17, 42.

⁶⁵ *Ibid.*, Vol. 2, p. 15. According to Cobo, their blood made indigenous people phlegmatic and lazy. At the same time, because they were of a sanguine type, indigenous people abounded in inner heat, at which Cobo marvelled. He reported that natives had warm hands even in the coldest regions of the Andes.

⁶⁶ For Calancha's comments on bodily differences, see De la Calancha, *Crónica*, p. 68. According to Calancha, differences between Creole and Indian bodies did of course exist. He followed Hippocrates' *Airs, Waters, and Places* in arguing that warmer and milder climates make the people "more benign and more affable." The stars were multiplied in their goodness because the geographical properties of the New World were perfect. But these benefits applied only to the Creoles, who had greater intellectual capacity than did Spaniards in Europe and who learned faster in the New than in the Old World. The Amerindian body, in Calancha's view, reacted to these influences very differently, because indigenous bodies were made of different matter "according to their temperament," "according to the disposition of their brains," and "according to their bodily organs."

differences—Cobo ascribed them to the “secret of nature.” Thus, although bodily differences were assumed to exist, in the late 17th century this assumption had hardly any practical ramifications for the missionaries who were actually dealing with sick Indians. Missionaries sought to use Christian healing to direct indigenous people away from idolatrous customs. Therefore, Jesuits set up their pharmacies in their missions and sometimes served Andeans—with exceptional dedication—in their *enfermerías*. But throughout the colonial period, most indigenous people in the hinterlands of Lima, in the Central Cordillera, in the Andes around Cuzco, further south in Potosí, and along the northern coast, continued to consult indigenous healers, who (much like the judicial astrologers) had learned to conceal their arts. Francisco Bermejo y Roldan’s *Discurso de la enfermedad sarampión* (1694) aptly demonstrates the limits both of astrological doctrines and of “matter” theory when it came to healing indigenous bodies.⁶⁷ Francisco Bermejo y Roldan became a professor “de la prima” in medicine at San Marcos University in 1692. He was especially concerned with the treatment of indigenous people and was interested in the effects of measles on native bodies, probably because he wanted to see why they were more likely than Spanish bodies to fall prey to epidemics. Although he believed that measles was caused by the universal corruption of air, a contagion that would have spread with equal ease to Spanish and Creole bodies,⁶⁸ his dissections seem to have been limited to the bodies of dissected dead Indians. He found in them only “liver[s] enflamed and swollen and full of blood.” This was not a particularly unusual outcome. Nevertheless, his attempt shows that he focused his investigation not on contagion or hygiene but on internal bodily differences. Thus, Bermejo y Roldan was more a doctor than an astrologer; the hypothesis of heavenly causes was of little use to him, because his primary concern was the health of indigenous people in the countryside. His treatise reads like a handbook for those missionaries among native South Americans who were several days by mule away from the nearest university-trained medical doctor and thus had to act as doctors themselves. He suggested feeding the indigenous people generously with their own foods, such as potatoes,

⁶⁷ F. Bermejo y Roldan, *Discurso de la enfermedad sarampión experimentada en la ciudad de los Reyes del Perú* (Lima: 1694). On his career, see J. Lastres, *Historia de la medicina peruana*, Vol. 2. *La medicina en el virreinato* (Lima: 1951), p. 169.

⁶⁸ F. Bermejo y Roldan, *Discurso*, pref.: “Per Ayre und causas superiores; segunda causa con malignas infecciones influidas del cielo al ayre por particulares aspectos y configuraciones de planetas y varias mezclas y juntas de estrellas.”

maize, and mazamorra (maize pudding), but not giving them aji or letting them drink spirits or wine until they were well restored.⁶⁹ Apparently, the reality of epidemics left no room for astrologically based treatments. Instead, in the eyes of the Jesuits such outbreaks called for mass conversions and perhaps for simple remedies of *materia medica*, which their pharmacies contained or which they adopted from the indigenous people. The missionaries thought that living outside the bondage of idolatry would guarantee a healthier life. In one respect, however, Indian and Creole bodies were alike: all could be subject to supernatural saintly—and thus godly—interference. The Jesuits told many stories about indigenous people on their deathbeds who had been healed “miraculously,” either after a demon had been exorcised from them or because some Jesuit missionary, with the help of God, had restored their health.⁷⁰ One very important healer, consulted by Creoles as well as Amerindians, was Fray San Martín de Porres, whose documents submitted in 1676 to urge his beatification, testifies to the limits of any astrological healing.⁷¹ Even for Creoles, the stars were often ignored when sick bodies needed to be healed. Instead, the saints and Mary—not astrology—began to dominate late 17th century stories about healings of sick Creole or Spanish bodies in Peru. In 1672, for example, in the Jesuit novitiate of San Pablo in Lima, fourteen-year-old Francisco Xavier was suffering from a paralysis of his right leg and arm.⁷² The poor boy was said to be as stiff and hard as a table. On 13 November,

⁶⁹ F. Bermejo y Roldan, *Discurso*, p. 45. At the time, alcohol was a standard remedy, but in 17th century Catholic discourse, indigenous idolaters were faulted for their use of spirits. Alcohol and indigenous people equalled idolatry (see, for example, Avila, 1648, pref.). Amerindians saw drinking chicha and similar alcoholic beverages as a holy ritual connected with the old Andean guacas (sacred loci or objects). See R. Randall, “Los dos vasos: Cosmovisión y política de la embriaguez desde el inkano hasta la colonia,” in T. Saignes, ed., *Borrachera y memoria: La experiencia de lo sagrado en los Andes* (La Paz: Hisbo, 1993), pp. 73–112.

⁷⁰ See, for example, Carta annua, Provincia Peruana, 1603, Collegium Arequipense, 220; Carta annua, Provincia Peruana, 1610, 500–501. The Jesuits, Augustinians, and Dominicans told numerous histories of miraculous inventions in the lives of the indigenous people. See, for example, ARSI, Peru, Vol. 19, 18: Relación del descubrimiento de la Cruz de Carabuco; Archivo Arzobispal, Trujillo: Sumaria información sobre un milagro que hizo Ntra. Sra. De Copacabana, en la ciudad de Trujillo, volviendo a la vida a un niño que se tenía por muerto, por haber caído en un estanque de agua (1601).

⁷¹ Archivo Arzobispal de Lima, Expediente para el proceso de beatificación, San Martín de Porres, 7 vols., 1678–1686.

⁷² Relación de la salud milagrosa, que dio el bienaventurado Stanislao Kostka, novicio de la Compañía de Jesús, a otro novicio de la misma Compañía, en la casa de probación de San Antonio Abad de la ciudad de Lima el día 13. de noviembre, consagrado al mismo Santo de ese año de 1673... ([1673]).

a friend who had entered the novitiate on the same day as Francisco brought the prior a remedy reportedly suggested to him by God: "A picture of B. Stanislao." The novice added, "Today is his day and it is only today that he will do good." Stanislas Kostka, a Polish Jesuit beatified in 1605, had worked miraculous cures in Europe. In the garden of San Pablo in Lima, which the author of this account likened to a paradise, the healing procedure began. "Tenga fe" (believe), the boy said to Francisco, further instructing him to "offer God something." Francisco pledged to recite a "Padre Nuestro" and an "Ave Maria" every day, to feast in honor of the saint, to adorn his altar with flowers, and to perform Ignatius's "spiritual exercises." After these promises were uttered, Francisco's friend took a picture of Saint Kostka and with it struck those body parts that were stiff—first Francisco's arm, then his side, and finally his leg. The boy began to move his arms and legs. The other Jesuits present shouted, "Milagro, milagro!" (miracle, miracle). Inspired by this wonder, the Jesuit Antonio de Céspedes preached a sermon in the church of San Pablo in Lima on Stanislas Kostka, praising the saint's supernatural capacities.⁷³ Naturally, Céspedes referred to the horoscope of this holy man and he employed metaphors that reflected his fascination with contemporary natural astrology. Kostka, said Céspedes, was born under benign signs: Virgo, which he equated with Mary, and Aries (the sheep), which he interpreted as the Eucharist.⁷⁴ Other accounts likewise underscore that Mary and Jesus ultimately reigned over the skies and stars, and it was they who intrinsically had the power to heal.⁷⁵ But the most astonishing element in the case of Francisco Xavier is the parallel between Jesuit and indigenous healing practices. During the 17th century (as they do to this day), Indian healers traced a sick person's body with a cuy (guinea pig). Apparently, a Creole body was more similar to an indigenous body than Creoles might wish. Twenty years later, in 1691, a similar instance of supernatural healing occurred in Arequipa. Don Pedro de Tapia y Peralta, a neighbor of Cuzco, was miraculously released from paralysis and muteness that had suddenly struck him two years previously. Several doctors had tried to heal him. They applied an herb called iredionda, which had been effective in similar cases: a Mercedarian friar rubbed his leg with it for twenty-four hours, to

⁷³ A. Céspedes, *Sermones varios predicados por el Padre Antonio de Cespedes, de la Compañía de Jesus, en el Reyno del Peru* (Madrid: 1677).

⁷⁴ Ibid., p. 35.

⁷⁵ See the Jesuit Jacinto Barrasa in his *Sermones varios predicados por el padre Jacinto Barrasa de la Compañía de Jesús, en el Reyno del Perú . . .* (Madrid: 1678).

no avail. A Dominican priest and doctor suggested indigenous cures: aji, schnapps, and mazamorra should all be put on the poor captain's leg (the hot pepper had a very aggressive bite, the anonymous author reported; the indigenous man who rubbed the Spaniard's body with it had to wear gloves). Even intense prayer with the rosary did not help; Don Pedro de Tapia remained paralyzed. As a last resort, the doctors recommended a pilgrimage to the "Virgen de Characato," near Arequipa, some three hundred miles away. Several indigenous people had to carry the sick Creole in a litter. When they finally reached the church that housed the Virgin's picture, the sick man was immediately put on the step right in front of the altar. He made a heartfelt silent appeal to the Virgin of Characato, and as he prayed he suddenly began to sweat heavily. As he mouthed the "sweet names of Jesus, Mary and Joseph," he began to talk. Full of tears the sick [man] said farewell to the miraculous picture after having finished with the salve. Afterward he visited with the same devotion the altar of Jesus and he was totally restored from his paralysis and his muteness. Cured, Don Pedro de Tapia rode a mule back to Cuzco. A miracle had taken place, restoring the sick captain (who had probably suffered a stroke) to full health. Since the Council of Trent had instructed bishops and priests to carefully scrutinize all such claims, the author related that he had sent this case to ten unnamed scholars to confirm that a miracle had occurred. They did so.⁷⁶ To this day, people venerate the Virgen de Characota. Memory associates her with many sick people who were healed not by nature but by a supernatural power, and specifically by the Virgin Mary.

Against Idolatry: Reinterpreting the Southern Skies

This desire to seek supernatural interventions and to read a heavenly script imparted a new quality to the discourse on astrology toward the

⁷⁶ Relación cierta y autentica de un milagro, que la divina majestad de Dios N. Señor se digno de obrar con el Capitán Don Pedro de Tapia y Peralta vecino de la ciudad del Cuzco mudo, y parálítico por tiempo de mas de dos años. Por la intercesión de la santísima virgen Santa Maria su verdadera Madre N. Señora, y abogada, y por la impetración y Patrocinio de la milagrosa Imagen de N. Señora de la Purificación o Candelaria del Pueblo de Characato de la Jurisdicción del Obispado de Arequipa, que sucedió en los días 6 y 7. de Enero del año de 1691. Escriviola sacándola de los autos originales, el Doct. D. Joseph de Lara Galan. Promotor Fiscal general y mayor de este Arzobispado de Lima: Abogado en su Real audiencia y en la de S. Francisco del Quito (1692). See also R. Vargas Ugarte, *Historia del culto de Maria en Iberoamérica y de sus imágenes y santuarios más celebrados* (3rd ed.) (2 vols.) (Madrid: 1956), Vol. 2, p. 149.

end of the 17th century. In 1681, the year in which Jesuits in Cuzco spotted a great “monster” in the heavenly skies that elicited from them elaborate public acts of penitence, and the year in which Lima reported a great comet followed by a destructive earthquake, the Cuzco painter Diego Quispe Tito (1601–1681) finished twelve images, called the zodiac series.⁷⁷ Adapting a Flemish archetype, Quispe Tito combined his depiction of the life of Jesus with a natural astrology that shows how the heavenly signs dictate the rhythms of activities in a European year, moving from sowing to planting and harvesting, and from trading to winter activities. One of the images contains a legend: Evangelical emblems of the twelve heavenly signs accommodated to the twelve months of the year. “Christ turned the stars over to man so that he may distinguish the evolution of time from its beginning with God . . . so that [he] can revoke idolatrous cults and arrive via these creatures [the stars] at the cult of the one and sole Creator and cast eyes on the mystical kingdom of the heavens.”⁷⁸ Beholding the stars in a Christian manner—that is, in a manner that allowed for natural astrology with respect to agriculture—was thus suggested as an effective means of combating idolatry. In the late 17th century, Diego Quispe Tito was not the only one who yet again combined the promotion of a Christian reading of the heavenly signs with the discourse on idolatry, thereby reinvigorating an approach that—as we have seen—had already guided Spanish chroniclers in their perception of Incan and Andean astronomy. At the beginning of the 17th century, Spaniards and Creoles referred to Incan and Andean astronomy, astrology, and idolatry to express dissatisfaction with Incan and Andean ignorance of a European cosmological thinking. For a while, as the century progressed, the Creole discourse of astrology began to pay more attention to medical astrology and astronomy

⁷⁷ On the comet, see J. de Mugaburu, and F. de. Mugaburu, *Diario de Lima, 1640–1694: Crónica de la época colonial*, H. H. Urteaga and C. A. Romero, eds., 2 vols. (Lima: Imprenta y Librería Sanmartí, 1917–1918), Vol. 1, pp. 116, 118, and J. Melendez, *Tesoros verdaderos de las Indias* . . . (3 vols.) (Rome: 1681–1682), Vol. 1, p. 345. Both authors refrain from interpreting the sign.

⁷⁸ Quoted in T. Gisbert, “Del Cusco a Potosí: La religiosidad del sur andino,” in R. Mujica Pinilla et al. eds., *El Barroco peruano* (2 vols.) (Lima: 2002–2003), vol. 2, p. 73: “Emblemata evangélica de los doce signos celestes acomodados según los meses del año. Cristo dio al hombre los astros para que por ellos puedan distinguir la evolución del tiempo iniciado con Dios (seg. Gen. I) y para que ellos puedan revocar el culto idolátrico, y por medio de estas creaturas llegar al culto de un solo Creador, y que pongan los ojos en el reino místico de los cielos.” See also T. Gisbert, and J. de Mesa, *Historia de la pintura cuzqueña* (2 vols.). (Lima: 1982), vol. 1, p. 157. A similar zodiac series in the Cathedral of Lima had no specific religious meaning (see L.E. Wuffarden, “La Catedral de Lima y el ‘triumfo de la pintura,’” in G. Lohmann Villena et al. (Eds.), *La Basílica Catedral de Lima* (Lima: 1999), pp. 242–313.

than to idolatry, striving to determine the exact astronomical position of Creole lands. But as the 17th century drew to a close, Creoles returned to the discourse about the stars as a way to combat idolatry. This time, the discourse expressed deep-rooted Creole disappointment with what missionaries had achieved: many Creoles, and in particular a number of Jesuits, grudgingly were forced to acknowledge that idolatry continued to persist. As Jesuits reported to Rome from the Conchucos (1675), the Mojos (1676), Huanuco (1688), Lima and Cuzco (around the 1690s), and the Gualalies and Carabuco (1697), and as several other instances made clear, indigenous people were still embracing idolatrous cults.⁷⁹ Therefore, the Roman Provincial Tirso González gave yet another explicit instruction on how to finally eradicate idolatry, ordering that regular visitations become even more frequent. On the whole, the methods adopted by the Jesuits throughout the 17th century seemed to have been insufficient.⁸⁰ Beginning in the late 16th century, Jesuits had suggested confession and destruction of idols. Later they had pursued systematic visitations, confessions, incarcerations, and even the banning of religious specialists, whom they considered to be the leaders of Andean idolatrous cults. From 1621 onward, the Jesuit Pablo José de Arriaga also suggested the replacement of Incan spiritual theories about the stars with a Christian notion, repeating what the Third Council of Lima had already said: that God used the heavenly bodies to transmit his will. In the mid-17th century, Fernando de Avendaño and Pedro de Villagómez continued to advocate combating idolatry by instructing indigenous people about the Christian heavens.⁸¹ But despite all these efforts, idolatry persisted up to the end of the century: it was clear that the official policy, the campaigns to extirpate idolatry

⁷⁹ See, for example, ARSI, Perú, Vol. 17, fol. 165r, fol. 225v et seq.; Vol. 21, fols. 32 ff.; Vol. 20, fol. 157. See Polia, *La cosmovisión*, pp. 542–546, 549–554.

⁸⁰ See, for example, Duviols, *La lutte*, and Mills, *Idolatry*.

⁸¹ The standards were set by the Third Council of Lima. See “Platica Breve en que se contiene la summa de lo que ha de saber el que se haze Christiano,” in *Doctrina Christiana y catecismo para instrucción de indios: Facsímil del texto trilingüe* (1985), p. 56; “Sermon V,” *ibid.*, pp. 406–407; “Sermon VI,” *ibid.*, pp. 420–421; “Sermon XVIII,” *ibid.*, pp. 558–559; and F. de Avendaño, *Sermones de los misterios de nuestra santa fe catolica . . .* (Lima: Iorge Lopez de Herrera, s.a. [1649]), sermon 4. See also P. J. de Arriaga, *La extirpación de la idolatría en el Peru* (1621) H. Urteaga, ed. (Lima: Imprenta y Librería Sanmarti y Cia: 1920), p. 22: “Todas las cosas sobredichas son Huacas que adoran como a Dios, y ya que no se les pueden quitar delante de los ojos, porque son fixas, y inmóviles, se les procura (como dixe arriba) quitárselas del corazón, enseñandoles la verdad y desengañandoles de la mentira, y assí es necesario enseñalles muy de propósito las causas de las fuentes, y de los ríos, y cómo se fragan los Rayos en las nubes, y se congelan las aguas, y otras cosas naturales, que a menester saber bien quien las enseña.”

undertaken in Lima's diocese with its support of several archbishops from 1609 to the 1660s, had not succeeded. The failure of conversions became especially obvious in Cuzco and the southern Andes, where missionaries agonized over idolatry. This dissatisfaction with what missionaries had accomplished was not a concern for Jesuits alone: It also affected how Creoles viewed themselves. In his 1737 poem on Lima—a poem that was saturated with astronomical data, astrological metaphors, and allusions to natural astrology—the Enlightenment scholar Pedro de Peralta argued that ultimately, the only factor preventing Creoles from prospering (and from becoming the equals of Europeans) was the persistence of idolatry in their lands. Creole Lima would not achieve prosperity if it did not banish idolatry. Barbarians should be replaced with saints.⁸² And in an anonymous 18th century Cuzco painting, astrology is likewise combined with a missionary statement and implicitly with the analysis of the state of religion in Creole lands. The image, replete with astrological symbolism and a moral reading, shows a European, an Indian, an African and an Asian woman, receiving the rays of the zodiac signs. The zodiac signs are associated with the divine and cardinal virtues. The only woman in the foreground who turns her face to the scintillating zodiac (bounced off by the Holy Ghost) is Spanish. The rays of fides associated with Aries hit her. An Indian woman is shown to be still in need of the cardinal virtue of love. She turns her face away from the heavens. This Creole self-image, torn between pride and frustration about lingering idolatries, motivated a new reading of the stars that was no longer guided solely by natural astrological interests: it was now also influenced by moral outlook that took celestial events as the hieroglyphs of God's will.⁸³ Thus, toward the end of the century, Jesuits and other Creoles with greater frequency than before

⁸² Peralta, *Lima fundada*, Vol. 1, p. 63; Vol. 2, pp. 278, 287, 354, 405. "Dura, pues, fausta, sin que en cielo y tierra astro te ofenda, ni bayben te assalte, prospera reyna, sin que en paz ni en guerra, deseas esplendor, triumpho te falte: la idolatria al tartaro destierra, la fe, como en su throno, en ti se exaltes y para Dios en un ardour florescas con que a santo por barbaro le ofrescas." On Peralta see I. A. Leonard, "A Great Savant of Colonial Peru: Don Pedro de Peralta," in L. Hanke (Ed.), *History of Latin American civilization: Sources and interpretations*, Vol. 1: *The colonial experience* (pp. 420–428) (London: Methuen, 1969).

⁸³ Jesuits believed that celestial events could be deciphered as if they were ancient Egyptian hieroglyphs and thereby shown to express a Christian moral statement. The Jesuits had a long tradition of such unlocking of meaning: in the *ratio studiorum*, it could be part of the training in rhetoric. Filippo Picinelli took the whole world as a symbolic reference to God. Athanasius Kircher's *Iter exstaticum* (1657) fostered a hieroglyphic decipherment of the heavens that became especially influential among American scholars. On the reception of Athanasius Kircher in Peru see also Brosseeder (Forthcoming).

interpreted earthquakes (for example, those of 1681 and 1687), comets, the threats posed by other Europeans off the shores of the Pacific, indigenous rebellions, and heresies, as signs of God's dissatisfaction with Creole piety.⁸⁴ Within the span of a few decades Llano y Zapata alone counted 568 earthquakes, which were all considered portents.⁸⁵ The Jesuits took the heavenly "monster" in Cuzco's skies as a sign of God's punishment. They met it with penitence and with the chance discovery of more idolatries. The Jesuits reported, "an extraordinary portent [appeared] that exhibited divine justice and moved the whole city to penitence... Cuzco inhabitants hit themselves with stones, others did so with chains on their backs... and they found in the cemetery of the [Cuzco] churches many instruments of sorcery..."⁸⁶ Portents, penitence, and the revelation of idolatries thus coincided in the reading of the skies. The Jesuit Francisco Xavier Salduendo summarized a widespread belief when he preached in the Cathedral of Lima in 1695 that God "on the day of the final judgment will start to intimidate and punish the earth with signs of the sun, the moon, and the stars... and they all follow his judgment [because] erunt signa in sole [alluding to Luke 21:25]."⁸⁷ Apocalyptic fears ran rampant.⁸⁸ In the end, the fear of God's punishment required an even closer reading of heavenly events and motivated the publication of almanacs, which proliferated after 1721. It also motivated Jesuits and others to shift their own attempts to eradicate idolatry into a new sphere—to relocate extirpation

⁸⁴ ARSI, Perú, Vol. 20, fol. 277/8, fol. 281. For heresies among Mestizos and Christians, see J. del Hoyo, *Relación completa y exacta del auto público de fé que se celebró en esta ciudad de Lima a 20 de diciembre de 1694*... (Lima: Imprenta Real Joseph de Contreras y Alvarado, 1695). See also the sermon praising the Inquisition by Nicolás Antonio Díez de San Miguel y Solier, *La gran fee del centurión Español*... (Díez de San Miguel y Solier, 1695).

⁸⁵ The interpretation of earthquakes as signs of God's wrath dominated in the late 17th century (see *Novena a la virgen de las lágrimas nombrada nuestra Señora del Aviso*..., 1690, and Rojas, 1689). The same reading continued into the 18th century (see Llano y Zapata, 1748). On the role of this one specific 18th century earthquake in Peruvian history, see Charles F. Walker, *Shaky Colonialism. The 1746 Earthquake-Tsunami in Lima, Peru, and its long Aftermath* (Durham-London: Duke University Press, 2008).

⁸⁶ M. Polia, *La cosmovisión religiosa andina en los documentos inéditos del Archivo Romano de la Compañía de Jesús (1581-1752)* (Lima: 1999), p. 542.

⁸⁷ F.X. Salduendo, *Los siete ángeles del Apocalipsis en siete sermones de los siete miércoles de Quaresma, que predicó en la iglesia catedral de Lima* (Lima: 1695), p. 133.

⁸⁸ In his *Tratado de los Evangelios* of 1646/48 Francisco de Avila, by copying the Praxis Catechismi, the appendix of the Catechismus Romanus, already explained the meaning of "erunt signa in sole". On apocalyptic fears see also R. Mújica Pinilla, "El arte y los sermones," in Pinilla et al., eds., *El Barroco peruano* (2 vols.) (Lima: 2002-2003), vol. 2, pp. 219-314, especially p. 244.

attempts from the earth into the heavens.⁸⁹ As Diego Quispe Tito said, beholding the stars was a means to combat idolatry. One part of this relocation process was reinterpreting the heavens by promulgating the Virgin Mary as mother of the skies. It was either Mary Immaculate or a Mary identical with the apocalyptic woman clothed with the sun that was inscribed into Peruvian heavens. There are far more examples of this trend than can be provided here. In the 1650s, Espinosa Medrano, an expert in astrology who was once a Jesuit, suggested a Marian interpretation of the heavens, saying that the stars once venerated as gods now belonged to Mary.⁹⁰ It was his way of combating the demons. An anonymous 17th century broadsheet titled "cielo estrellado de Maria" inscribed the life of Mary into the heavenly spheres of the "primer mobil," "cristalino," "Saturn," "Jupiter," "Mars," and the "Sun."⁹¹ As already noted above, in 1672 the Jesuit Antonio de Céspedes in his sermon on the Polish saint Stanislas Kostka fused the Virgin Mary, who crowned the saint, with the sign of Virgo. In 1681, the Jesuit Francisco Lopez, in his unorthodox interpretation of Joseph's dream in Genesis, stated that the stars were merely hieroglyphs representing saints and that the sun, the moon, and the stars were identical with the Holy Trinity.⁹² An anonymous Cuzco painting of 1682 that copied the frontispiece of Fr. Antonio de Santa Maria's *Espana triunfante* (1682) showed Mary as the mother of Spain and the heavens.⁹³ And in his *Sermones al milagroso aviso que dio a la ciudad de los Reyes la serenissima reyna de los cielos Maria* (1688), Francisco Rodríguez Fernández a Franciscan who like the Jesuits promoted the devotion of the

⁸⁹ On the 16th and 17th century history of Spanish and Creole combats against alleged indigenous idolatries see Pierre Duviols, *La lutte contre les religions autochtones dans le Pérou colonial: "L'extirpation de l'idolâtrie" entre 1532 et 1660* (Paris, Lima: 1971) and K. Mills, *Idolatry and its enemies: Colonial Andean religion and extirpation, 1640–1750* (Princeton, NJ: 1997). For the greater context of evangelization efforts in Peru see Sabine MacCormack, *Religion in the Andes: Vision and Imagination in Early Colonial Peru* (Princeton, NJ: 1991), Juan Carlos Estenssoro Fuchs, *Del paganismo a la santidad: La incorporación de los indios del Perú al Catolicismo 1532–1750*, translated by Gabriela Ramos (Lima: 2003); Alan Durston, *Pastoral Quechua: The History of Christian Translation in Colonial Peru, 1550–1650* (Notre Dame, Indiana: 2007), and Peter Gose, *Invaders as Ancestors: On the Intercultural Making and Unmaking of Spanish Colonialism in the Andes* (Toronto: 2008).

⁹⁰ See J. de Espinosa Medrano, *La novena maravilla nuevamente hallada en los panegíricos sagrados que en varias festividades por el Señor dixo . . . D. Juan de Espinosa Medrano primer canónigo magistral tesorero . . .* (Lima [1650]), pp. 71 ff. and R. Mújica Pinilla, "El arte," pp. 219–314.

⁹¹ Extant in the collection of Rubén Vargas Ugarte, Ruiz de Montoya library, Lima.

⁹² F. Lopez, *El sueño de Joseph . . .* (Lima: 1681).

⁹³ Mújica Pinilla, "El arte," p. 263.

Immaculate—hailed Mary as the mother of the heavens while providing a detailed explanation of her status as immaculate. Depictions of the Immaculate with the globe and a serpent underneath her feet (an allusion to Genesis 3:14–15) and of the Madonna on the crescent moon, recalling the woman in the book of Revelation (12:1–17) who gives birth to the Messiah, abound. Sometimes painters fused the attributes of the two women, the Immaculate and the apocalyptic. In all these representations, Mary was viewed as the one who mediated the influences of the stars, the one who reigned over the saints, and, most particularly, the one who combated the apocalyptic beast. A Marian heaven was in the end the desired solution to the problem of idolatry; she was the one who mediated the “ira dei”—as Francisco Calvo de Sandoval argued in his 1659 sermon on the “fiesta al Patrocinio de la Virgen.”⁹⁴ Of course, the glorification of Mary followed a political proclamation from Spain in 1643 declaring her patroness of the Americas, as well as the prescription of the defence of the concept of the Immaculate (in Lima in 1654).⁹⁵ And yet, in Peru the heavenly Mary expressed the hope for consolation and more.⁹⁶ For the attempt to redefine the heavens by including Mary not only promised a solution to a long-standing problem—the problem of idolatry—but also became a symbol of Creole identity. Creoles likewise rewrote the heavens with Greek and Roman mythological allegories,⁹⁷ which had lost their idolatrous connotation and thus could be used to symbolize Creole greatness and piety. Moreover, they served to combat sacred entities of the Incans and Andeans, whose stars and concepts of the planets never were incorporated into a Christian heaven. At the end of the 17th century, the three developments in astrological discourse mentioned above—the observation of God’s will in a language of signs, the re-inscription of Mary into the

⁹⁴ See F. Calvo de Sandoval, *Sermón que predicó el Doctor Don Francisco Calvo de Sandoval en la celebre solemnidad a la siempre Virgen Maria santísima Señora Nuestra, que por el Patrocinio de toda su Monarquía manda su Magestad se haga la segunda Dominica de Noviembre todos los años en esta Santa Iglesia Metropolitana de los Reyes, y en todas las Catedrales destos sus Reynos . . .* (Lima: 1659).

⁹⁵ Recopilación de Leyes de los Reynos de las Indias (1943), Vol. 1, libro I, título I, ley XXVIII, p. 8; Vargas Ugarte, *Historia de la iglesia en el Perú*, 5 vols. (Lima: Imprenta Santa Maria: 1953–1962).

⁹⁶ See F. Rodríguez Fernández, *Sermones al milagroso aviso que dio a la ciudad de los Reyes la serenísima reyna de los cielos Maria* (Lima: 1688).

⁹⁷ In the wealth of Peruvian sermons and treatises that (especially in the latter half of the 17th century) refer often to Greek and Roman classics, I will here simply point to one example that combines Greek mythology with an astrological reading: P.J. Bermúdez de la Torre y Solier, *El sol en el zodiaco . . .* (Lima: 1717).

heavens, and the projection of classical allegories into the heavens—were added to astro-medical interests that lingered into the 18th century. At the same time, interest in astronomical details for their own sake was strong. From 1721 onward, almanacs were printed yearly, a practice that endured into the 19th century. Pedro de Peralta, Gabriel Moreno, Eduardo Carrasco, Juan Rer, and Cosme Bueno, among others, published calendars containing natural astrological information that satisfied medical astrological demands and also assuaged deep-rooted fears of being bereft of God's mercy, which made at least some Jesuits feel like Joseph in Egypt.⁹⁸ These mathematicians, cosmographers, and medical doctors thus closed the new age of astronomy that had begun with Ruiz Lozano. But they also met new and more vigorous demands from a Creole audience that looked into the heavens to anticipate when God was to punish them again and to find consolation. Our explorations into the various aspects of the astrological discourse in the 17th century have uncovered the following picture. The Peruvian Inquisition was indeed quite successful in implementing Europe's Counter-Reformation attitude towards judicial astrology in Peru and thus in blocking the development of astrological introspection that might have guided an individual through his or her life—and that might, perhaps, have led to a Renaissance type of Creole astrological individualism. Instead, the astrologically based Creole identity that evolved in Peru defined itself through mythological and Marian readings of the heavens. At the same time, a natural astrology survived throughout the 17th century in the form of a medical astrology that was apparently taught in major institutions. It seems, however, that this astro-medical discourse was almost entirely theoretical, with little influence on medical practice. In 1660, Juan de Figueroa tried to convince his contemporaries that medical astrology was useful and must be taught, but apparently with little success (his arguments may have had some impact on Cosme Bueno in the 18th century). By the mid-17th century, a number of Creole scholars had turned away from the Renaissance desire for a new southern Astrology

⁹⁸ As late as the 1780s, Cosme Bueno was still pairing his astrological prognoses with dietary advice, weather forecasts, and information on saints' days, eclipses, and illnesses. In 1783, for example, Bueno gave the following prognosis: "When the sun enters the first grade of the sign of Capricornio on the twenty-first of December between the tenth and thirteenth minute of the morning, the sicknesses that one can expect are vomiting, sweating, and many inflammations . . . One should avoid heavy exercises and exposure to the sun." (C. Bueno, *El conocimiento de los tiempos: Efeméride del año de 1783* . . . [Lima: Imprenta Real Calle de Concha, 1783]). On the metaphor of Joseph in Egypt, see, for example, ARSI, Perú, Vol. 16, fol. 185r (1667–1674).

for Peruvian Creoles, as promoted by the Augustinian Antonio de Calancha. Instead, they became aware that astrological prognostications required a solid foundation in astronomy. Ruiz Lozano and a number of Jesuits, who were in contact and exchanged astronomical data with their peers in Mexico and Europe, advocated a new astronomy; as a result, ephemerides were calculated and calendars with basic information on natural astrology were published. The calendars satisfied a lingering fear, especially among ecclesiastics, that God was dissatisfied with the state of piety in their Creole land. Jesuits began to view the stars as signs, which required a moral reading—that is, in the language of the time, they began to take stars as hieroglyphs. This effort, in turn, required yet more attention to astronomical data so that God's will could be accurately divined. The fear of what God might say through the stars also gave rise to a veneration of Mary, especially in her aspects as the apocalyptic woman of Revelation 12 and as the Immaculate. Trust in Mary and in a heaven protected by her was thought to solve the continuing problem of idolatry by addressing it on a new level. Mary as the queen of the heavens could defend Christianity and combat the beast of Satan. This shift in astrological discourse at the turn of the 18th century revealed a longing for a Creole land where idolatry was replaced by a Greco-Christian heaven or, even better, by Mary reigning over the sky.

CONCLUSION

In his article on “généthliologie” Louis de Jaucourt pointed out to readers of the French *Encyclopedie*’s third volume (1757) that this “frivolous art” was based on two terms meaning “generation,” i.e., the event of birth, and, strange to say, “reasoning.” Expressing some astonishment at astrology’s centuries-long “reign over the earth” in the guise of a rational form of knowledge, he took the occasion to reflect on “how the feeble mind delivering itself to vain speculations thought to find relations where they did not exist in nature.” The only reason to include it, along with other “chimerical” practices in a “Dictionary of the Arts and the Sciences,” Jaucourt went on, was to remind people about “the imbecillity and the perennial superstition of unfortunate mortals.” The mistakes of the past hopefully would not be repeated in the bright new age now promised by the Enlightenment. He died in the expectation of this fortunate outcome, too early to witness the phenomenon of Mesmerism, an astrology-related medical cure that reached a peak of popularity over the next half century, suggesting his predictions were slightly premature.

The sciences, in their effort to rid the world of its former enchantments, could only do so much. The new physiology pioneered by Giambattista Morgagni (1682–1771) was to focus exclusively on man abstracted from his terrestrial and celestial context, and on disease pathologies based entirely on the body and its immediate environment. The earth science of Robert Hooke (1635–1702) and Antonio Vallisneri (1661–1730) focused exclusively on the effect of wind, ice, water, and the roiling turmoil under the earth’s own crust. As a new universe, activated by mechanical movements, replaced the old one, activated by similarities, the macrocosm-microcosm analogy lost much of its explanatory power. No wonder any notion of unseen forces acting at a distance encountered stiff opposition. Leibniz and other mechanical philosophers faulted even Isaac Newton for having brought the occult back into natural philosophy by the notion of a universal attraction. They were only partly right. In Newton’s mind, a hypothetico-deductive explanatory model could afford a single supposition, if the balance of correlated phenomena seemed to stand on the side of probability. Although Newton delved deeply into the science of astrology and corresponded with Thomas Burnet concerning the political

significance of the comet of 1680, nonetheless, he never drew upon the astrological tradition to explain planetary gravitation.¹

However, the task of examining astrology, not as a key to the future, but as a key to understanding the culture of the past, was already well under way when Jaucourt attempted to deliver one last futile death-stroke. As a serious object of study, indeed, it would never go away.² Just to give some examples of the early modern recuperation of astrological antiquity, Claude Saumaise (1588–1653) considered the origins of the concept of climaterical or dangerous years, imported into Greek astrology from Egyptian and Chaldean traditions with much gained and lost along the way. Johann Gerhard Vossius (1577–1649) studied the ancient religion that lay at the foundation of the natural philosophy, astronomy and astrology inherited by the West. In his view, pagan mythology was nothing other than biblical history seen through the fantastically distorted lens of a fallen people. Pierre Bayle (1647–1706) combed the ancient historians for references, frequently contradictory and misleading, to celestial bodies as portents and signs. John Toland (1670–1722) inquired into the development of the concepts of the zodiac from, so he thought, an archaic cult of the dead symbolized in the stars. Subsequent generations, he said, sublimated the earlier cult, attributing to the stars extraordinary powers. Modern kingship and modern religion shared a common program, as the origins of the beliefs faded into obscurity, at least among the masses, and priests and rulers took advantage of popular credulity to increase their own authority.

By the time Franz Boll, Carl Bezold and Aby Warburg got around to examining what Boll denominated “the most singular centaur that religion and science have ever produced,” astrology had already been reclaimed as a majestic heritage of the Western world enriched by Eastern wisdom.³ “An association of reasonings in scientific form along with masked faith, unique in the history of human thought,” Auguste Bouché Leclercq called it, introducing his pioneering effort to understand Greek astrology from the inside out, using the best philological methods.⁴

¹ Simon Schaffer, “Newton’s Comets and the Transformation of Astrology,” in Patrick Curry, ed., *Astrology, Science and Society* (Woodbridge, Suffolk: 1987), p. 224.

² For what follows, my “Astrologia,” *Enciclopedia Italiana Storia della Scienza*, (Rome: 2003), 6: 606–612.

³ Maurizio Ghelardi, “Introduzione,” to Franz Boll and Carl Bezold, *Interpretazione e fede negli astri: Storia e carattere dell’astrologia*, tr. Maurizio Ghelardi and Susanne Müller (Leighorn: 1999), p. 8.

⁴ *L’astrologie grecque* (Aalen: 1979), p. i.

He possessed the anthropologist's fascination for the obviously primal character of the classification schemes articulated in Ptolemy's attempt to convey a tradition that was already ancient in his own times. Warburg, on the other hand, determined to "bring such forms out of the twilight of ideological polemic and to submit them to historical scrutiny"—not only as an aspect of the Classical heritage that helped explain Renaissance culture, but as a key element in the symbolic representation of ideas in politics, law, religion and social association across many centuries of human life, neglect of which had beclouded a whole portion of art history.

Carl Jung, the founder of analytical psychology, discovered in the study of astrology not just a key to the symbolic language of history in general or of the Renaissance in particular, but of the human species across time and space. In correspondence with Freud he remarked, "I dare say that we shall one day discover in astrology a good deal of knowledge that has been intuitively projected into the heavens. For instance, it appears that the signs of the zodiac are character pictures, in other words libido symbols which depict the typical qualities of the libido at a given moment."⁵ Freud responded with polite words of encouragement, accompanied by cautious urging to savor of the occult as long as necessary, but eventually to come back to regular studies. The general appraisal was telling, also from the standpoint of the psychology of astrological investigations in all ages. "I am aware that you are driven by innermost inclination to the study of the occult," said Freud; "and I am sure you will return home richly laden. I cannot argue with that, it is always right to go where your impulses lead." If astrological knowledge seemed to be true, at least as far as the individual seeker was concerned, then it probably was true, at least in the given case. To the developing historical and anthropological relativisms, he added another, of the psychological kind.

Theodor Adorno, on the other hand, writing from another quarter of the human sciences, refused to hear the tones of ancient intelligence in what for him could only be a mass delusion. Examining the astrology column of the *Los Angeles Times* in the 1950s, he found confirmation for his disappointment about the powerful normalizing trend within Western society, which administered a numbing palliative for the alienating fragmentation of mass capitalism and dampened any desire for strong emotions or

⁵ *The Freud/Jung Letters: the Correspondence Between Sigmund Freud and C.G. Jung*, ed. William McGuire, Ralph Manheim, R. F. C. Hull, Abridged edition (London: Picador, 1979), pp. 184, 186.

coherent reasoning. Toward the deliverers of the commodity commonly distributed in the papers, as toward the ruling class in general, the preferred attitude of readers was a mild psychosis. Whatever may have been the origins, whatever the merits or demerits, "the climate of semi-erudition is the fertile breeding-ground of astrology because here primary naïveté, the unreflecting acceptance of the existent has been lost, whereas at the same time neither the power of thinking nor positive knowledge has been developed sufficiently."⁶

For whatever reason, still in the 1950s, astrology was an immovable fixture of the cultural landscape, as arguably it still is sixty years later, even in the form of an application on mobile phones. Indeed, as a system of belief concerned with the way individuals situate their own triumphs and tragedies within the larger context of human and celestial cycles, astrology has seemed to offer answers that other forms of inquiry could not give. This alone has contributed significantly to its place within the popular episteme, even without taking into account the strength of the tradition itself. According to another reading, astrology's persistence is precisely owing to its fundamental cognitive structure. If modern science usually demands the framing of concrete questions for which a negative or affirmative response is conceivable, astrology continues to suggest only one research program: the proof of its own validity; and to the question of its own validity, however improbable, it elicits more or less the same responses now as it did in the Renaissance. This appears to classify it among the operations more concerned with natural faith than with natural fact; but clearly it is, and was, far more than that.

Hard times bring out the prophets and their avid audiences. So does war. Hawks in the Reagan administration recruited Charlton Heston on television to recite passages from Nostradamus supposedly relating to Saddam Hussein, apparently with stunning success, in perhaps the last public demonstration of the power of Renaissance astrology. As we write, nostalgic and perhaps conspiracy-oriented online interpreters are weighing the significance of the entrance of Saturn into Virgo in September 2007 in relation to the collapse of Northern Rock, the first of the great bank failures, and an opposition between Saturn in Virgo and Uranus in Pisces at the time of Barack Obama's election on November 4, 2008, in

⁶ Theodor Adorno, *From the Stars Down to Earth and Other Essays on the Irrational in Culture*, ed. with Intro. by Stephen Crook (Routledge, 1994), p. 45.

relation to a possible resolution of the economic crisis. Vedic astrologers have chimed in, looking to the end of Jupiter's transit through Bharani-Rohini-Mrigasira in June 2013. We hope for the best.

And who can blame the curious? No doubt, the social sciences have proved somewhat slow to develop effective models for predicting future political revolutions or economic catastrophes, and indeed, like the astrologers, they do their best work after the fact. They have nonetheless provided an intelligible language for dealing with struggle and change, one that, despite our skepticism, we all share. In the Renaissance, astrology was such a language; and like all powerful doctrines, it remained in a creative dialogue with itself, as well as with its society, through the period and beyond. Among its detractors as well as its enthusiasts, stellar causation was food for thought, and the desperate inefficiency of the practice was no disincentive to ever deeper investigations.

The language of the stars spoke, of course, not only of states and monarchies, but of the people in them, whose bodies and organs were presumably moved by the same influences; and apart from the more obvious medical aspects, the drawing up and explicating of nativities, which constituted the central core of astrology, brought the seeker and the practitioner into contact with the most intimate details of a single life. And here astrology flowed into the much vaster stream of discourse regarding Renaissance subjectivity. The freedom of the human will and the power of fate seemed to grow out of the same humanist terrain; and the controversies about predestination between Christian sects reminded that there were no easy solutions. The charting of a path between freedom and constraint was the road to self-knowledge, Montaigne wrote, quoting Seneca, "*Magnam rem puta unum hominem agere*," which he translated (into French) as "Consider it a great thing to play the part of a single man." Marsilio Ficino used his own horoscope, and its unmistakably baleful signs, to think about, and in some way perhaps overcome, his own incurable melancholy, morbidity, and ultimately, his mortality.

The quest for harmony between the outer and the inner "zodiac," between the self and the cosmos, between the individual and the work of existence, has been going on at least since the dawn of human communities; and it starts again with every new life. Our methods of seeking have largely changed, the therapists wear different costumes and utter different formulae, the knowledge is found in different parts of the library, and the old uncertainties have given way to new ones. The framework whence tensions arise, the "other" whose immensity imposes, whose power con-

strains, now seems largely of our making: a society, a state, an economy, whose structures constitute the sun, the moon and the stars, and whose regular cycles appear occasionally to be punctuated by unpredictable ones. And from catastrophe we inevitably rise, chastened, for a moment weakened, but undaunted in the quest for understanding, which looms on an ever-receding horizon.

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